7032 / 7033 Technical Reference Manual

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1. Service Call Procedures

1. Service Call Procedures

Section Contents

Introduction

The Service Call Procedures section is used to identify a suspected problem. This section contains Call Flow, Initial Action, System Check, Additional Checks and Final Actions.

Call Flow illustrates the normal sequence of events used on each service call.

Initial Actions are used to gather information regarding the performance of the terminal. Initial Actions are usually the first steps performed on a service call.

System Checks are used to verify the normal operation of the terminal.

Additional Checks is a list of miscellaneous problems that may not be detected during System Checks. Refer to Table 1 in Additional Checks only if the problem is not isolated in System Checks.

Final Actions are used to complete the service call after the problem has been repaired.

1.1 Call Flow

The Call Flow diagram illustrates the normal sequence of events used on each service call.
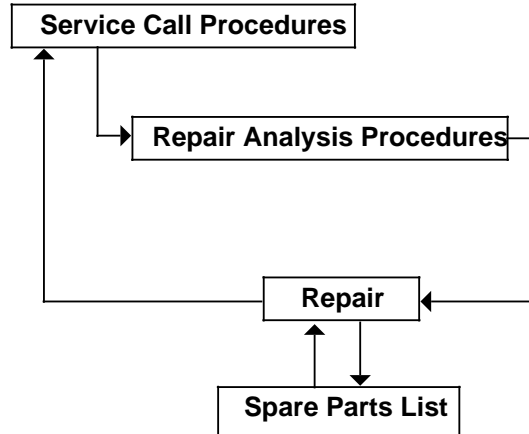
7033-101

Figure 1. Call Flow

1.2 Initial Actions

Initial Actions are used to gather information from the operator concerning problems at the local terminal. Make note of symptoms and error codes or other information concerning the problem that the operator may give you. This information may help you to identify an intermittent or unusual problem.

1. The operator is available.
    Y   N
    | Go to System Checks, Section 1.3.

2. Ask the operator to demonstrate problem or provide a sample of problem. The problem can be duplicated.
    Y   N
    | Go to System Checks, Section 1.3.

3. The problem is a result of improper operator action.
    Y   N
    | Go to System Checks, Section 1.3.

4. Instruct operator by referring to procedures in the User Handbook. Then ensure proper operation of the terminal by performing System Checks, Section 1.3.

1.3 System Checks

Begin each procedure in a System Check with step 1. It is important to follow the sequence outlined in the Off-Line and On-Line System Checks since each step assumes the previous steps to be correct. Each step is the normal operational event of the terminal and can be confirmed by answering **Y** (yes) to the statement. A **Y** response leads to the next step. An **N** (No) response will lead to a RAP in section 2 or to a component replacement. Replace the components listed after **N** in the order given.

Perform the System Checks to verify repair after completing each corrective action (replacing or adjusting a part, reseating a connector, etc.).

If an error code is displayed, go to section 2. Find the error code that was displayed, and follow the corrective action indicated.

If an operator function and error code are displayed, write down the error code and perform the operator function. If the operator function does not resolve the problem, go to section 2. Locate the error code in the error code list, and follow the actions indicated.

  If actions performed in section 2 do not resolve the problem remove option(s) (If installed) one at a time and re-run the Off-Line System check. If problem is isolated to an option proceed to Section 8 and follow the repair procedures for that option.

If Service Call Procedures do not isolate the problem, call for assistance.

1.3.1 Prepare for System Checks

1. Look for any obvious problems such as a paper jam, original document jam, or telephone or data cable connections loose at the terminal jacks or wall jack.

2. Ensure that the handset is on the handset cradle. Ensure that the power cord is connected to the terminal and to the wall outlet.

NOTE: If unable to perform any of the following steps or an error message prohibits other display indications, go directly to 1.3.2 Off-Line System Check.

3. Enter the service mode.

   RX NOTE: Refer to section 6.2 for procedure to enter and exit the service mode.

   a. Close Flip Panel.

   b. Press Exit.

   c. Press * on the key pad three times.

   cd Press Stop.

   e. If the terminal is in secure mode, repeat steps a, b, and c.

   f. The top line of the display flashes to indicate that you are in the service mode.

   ```
   LOAD ORIGINALS FACE DOWN
   TIME   ENTER TERMINAL ID/NAME
   ```

NOTE: If ENTER TERMINAL ID/NAME appears in the display, programming of local terminal name and ID is required.

4. Print the service mode options report. Save the report for Final Actions.

   a. Press 0 and 4 on the keypad, then press Enter. The display indicates:

   ```
   04 OPTIONS REPORT PRINT
   PRESS [START] OR [STOP]
   ```

   b. Press Start. The terminal prints the service mode options report while the display indicates:

   ```
   04 OPTIONS REPORT PRINTING
       PRESS [STOP] TO END
   ```

NOTE: If options report does not print, proceed to Off-Line System Check.

5. Set "Listen to Dial" to on.

   RX NOTE: Only set Listen to Dial on if you are permitted to listen to dial tones in your country.

   a. Open the flip panel. The display indicates:

   ```
   PRESS APPROPRIATE BUTTON(S) TO
                MAKE
   ```

   b. Press Sound Control. The display indicates:

   ```
   LISTEN TO DIAL, PANEL TONE,
              SPEAKER
   ```

   c. LISTEN TO DIAL should be flashing. Press Enter. The display indicates:

   ```
   LISTEN TO DIAL>  OFF, ON
   PRESS [SELECT] THEN [ENTER] OR
   ```

   d. Press Select. When ON is flashing, press Enter.

   e. Press Exit, then close the flip panel.

6. Exit the service mode.

   a. Press Exit.

   b. Press * on the key pad three times.

   c. Press Stop.

   d. The top line of the display stops flashing.

7. Perform the Off-Line System Check, 1.3.2.

1.3.2   Off-Line System Check

NOTE: If an error code (CXXX, EXXX, FCXX, FPXX, or OPXX) appears at any time during this check, do not continue. Refer to section 2 for the error code list, and perform the actions indicated.

If actions performed in section 2 do not correct the problem remove option(s) (If installed) one at a time and re-run the Off-Line System check. If problem is isolated to an option proceed to Section 8 and follow the repair procedures for that option.

1. Ensure that the handset is on the handset cradle, the power cord is connected and machine is not in service mode.

   The display is blank, characters are distorted, or incorrect characters are displayed.
   Y   N
   | Go to step 3.

2. Perform RAP 2.1.

3. The display is blank or characters are distorted.
   Y   N
   | Go to step 5.

4. Perform RAP 2.3.

5. Perform a self test.

   NOTE: If keys do not function properly at any time during the following tests, replace control panel, main PWB.

   a. Open the flip panel.

   b. Press Diagnostics.   The display indicates:

   ```
   TEST> SELF TEST, REMOTE TEST
   ENABLE
   ```

   c. SELF TEST should be flashing.   Press Enter. The following occurs:
   - Both lines of the display fill with characters, then change to solid blocks.
   - Control panel LEDs are tested one at a time. At the end of the LED test, the Memory Available LEDs remain on.

   All indications occur.

   Y   N
   | If an error code appears, go to section 2 and perform the actions indicated for the code. If an LED or display problem occurs, replace in order: control panel, main PWB.

6. For the next 40 seconds (approximately), processor circuits are tested and the display indicates:

   ```
              SELF TEST
               RUNNING
   ```

   Y   N
   | Perform RAP 2.3.

7. After the processor circuits are tested, several tones can be heard when the G3 PWB is tested.
   Y   N
   | Replace in order: G3 PWB, main PWB.

8. When self test is complete, a test pattern prints and the display indicates:

   ```
            REPORT PRINTING
   ```

   Y   N
   | If an error code appears, go to section 2 and perform the actions indicated for the code.   If no code occurs, replace the main PWB.

9. The test pattern quality is acceptable (compare to test pattern sample in section 3).

   Y   N
   | Replace in order: main PWB, thermal head, RAM/ROM PWB.

10. Press Stop. A normal tone is heard.
    Y   N
    | Perform RAP 2.22.

11. All LEDs on the control panel are off except the following: one of the Original Document LEDs, one of the Resolution LEDs, Upper Case, and Memory Available.
    NOTE: If a hard disk drive option is installed, some of the Memory Available LEDs may be off.

    Y   N
    | Replace in order: control panel, main PWB.

12. Close the flip panel. Place an original (test pattern 82P151) into the ADF face down.

    After the original is inserted, the display indicates:

    ```
    SELECT FEATURES THEN DIAL OR
    RESERVE JOB
    ```

    Y   N
    | Check the ADF document sensor (RAP 2.20). Replace main PWB.

13. Hold the original in place so it will not feed until the nudger solenoid actuates. Press Copy, then press Start.

    Nudger solenoid actuates approximately 4 seconds after Start is pressed.
    Y   N
    | Replace in order: nudger solenoid, main PWB.

14. When nudger solenoid actuates, release the original.

    NOTE: If the original is not released within 4 seconds after the solenoid actuates, a misfeed will be detected.

    Document feeds normally through the scanner and into the output tray.
    Y   N
    | Perform RAP 2.10.

15. The image quality on the copy is acceptable (compare to the test pattern sample in section 3).
    Y   N
    | Perform RAP 2.17.

16. Customer problem is a malfunctioning option.
    Y   N
    | Perform the On-Line System Check, 1.3.3.

17. Go to Additional Checks in section 1.3.4 to select appropriate test.

1.3.3 On-Line System Check

NOTE: Perform this check only after the Off-Line System Check has been performed.

NOTE: If an error code (CXXX, EXXX, FCXX, FPXX, or OPXX) appears at any time during this check, do not continue. Refer to section 2 for the error code List, and perform the actions indicated.

RX NOTE: If it is not permitted to listen to dial tones in your country, go to step 2.

1. Perform the following:

    a. Ensure the handset and telephone line cords are connected.

    b. Perform a send operation to a known good G3 facsimile terminal that is set to **auto** receive.

    The dial tone is heard when the terminal goes on-line.
    Y   N
    | Perform RAP 2.18.

2. Dialing completes successfully.
    Y   N
    | Replace in order: G3 PWB, main PWB.

3. The display indicates:

    ```
    SENDING DOCUMENT        (SPEED)
                            (RECEIVER
    ```

    Y   N
    | Perform RAP 2.16.

4. The display indicates that the terminal is sending in G2 mode (CCITTG2).
    Y   N
    | Go to step 6.

5. Replace in order: modem PWB, G3 PWB.

6. After completion of the send operation, the display indicates:

    ```
    SEND OPERATION COMPLETE          #
    TIME                          DATE
    ```

    Y   N
    | Replace in order: G3 PWB, modem PWB, main PWB.

7. The image quality received at the remote terminal is acceptable. (Image quality acceptance is determined by the remote operator.)
    Y   N
    | Perform RAP 2.16.

8. Call the terminal from another telephone. The terminal answers with ready tones.
    Y   N
    | Perform RAP 2.19.

9. Perform a receive operation. The terminal receives normally, and the display indicates:

    ```
        LOAD ORIGINALS FACE DOWN
    TIME                          DATE
    ```

    Y   N
    | Replace in order: G3 PWB, modem PWB, main PWB.

10. The image quality received is acceptable (refer to Image Quality Section 3).
    Y   N
    | Perform RAP 2.16.

11. Customer problem has been resolved.
    Y   N
    | Go to Additional Checks in section 1.3.4 to select appropriate test.

12. Go to Final Actions.

12. Close the flip panel. Place an original (test pattern 82P151) into the ADF face down.

    <u>After</u> the original is inserted, the display indicates:

    ```
    SELECT FEATURES THEN DIAL OR
    RESERVE JOB
    ```

    Y   N
    | Check the ADF document sensor (RAP 2.20). Replace main PWB.

13. Hold the original in place so it will not feed until the nudger solenoid actuates. Press Copy, then press Start.

    Nudger solenoid actuates approximately 4 seconds after Start is pressed.
    Y   N
    | Replace in order: nudger solenoid, main PWB.

14. When nudger solenoid actuates, release the original.

    NOTE: If the original is not released within 4 seconds after the solenoid actuates, a misfeed will be detected.

    Document feeds normally through the scanner and into the output tray.
    Y   N
    | Perform RAP 2.10.

15. The image quality on the copy is acceptable (compare to the test pattern sample in section 3).
    Y   N
    | Perform RAP 2.17.

16. Customer problem is a malfunctioning option.
    Y   N
    | Perform the On-Line System Check, 1.3.3.

17. Go to Additional Checks in section 1.3.4 to select appropriate test.

1.3.3 On-Line System Check

NOTE: Perform this check only after the Off-Line System Check has been performed.

NOTE: If an error code (CXXX, EXXX, FCXX, FPXX, or OPXX) appears at any time during this check, do <u>not</u> continue. Refer to section 2 for the error code List, and perform the actions indicated.

RX NOTE: If it is not permitted to listen to dial tones in your country, go to step 2.

1. Perform the following:

   a. Ensure the handset and telephone line cords are connected.

   b. Perform a send operation to a known good G3 facsimile terminal that is set to **auto** receive.

   The dial tone is heard when the terminal goes on-line.
   Y   N
   | Perform RAP 2.18.

2. Dialing completes successfully.
   Y   N
   | Replace in order: G3 PWB, main PWB.

3. The display indicates:

   ```
   SENDING DOCUMENT        (SPEED)
                           (RECEIVER
   ```

   Y   N
   | Perform RAP 2.16.

4. The display indicates that the terminal is sending in G2 mode (CCITTG2).
   Y   N
   | Go to step 6.

5. Replace in order: modem PWB, G3 PWB.

6. After completion of the send operation, the display indicates:

   ```
   SEND OPERATION COMPLETE          #
     TIME                        DATE
   ```

   Y   N
   | Replace in order: G3 PWB, modem PWB, main PWB.

7. The image quality received at the remote terminal is acceptable. (Image quality acceptance is determined by the remote operator.)
   Y   N
   | Perform RAP 2.16.

8. Call the terminal from another telephone. The terminal answers with ready tones.
   Y   N
   | Perform RAP 2.19.

9. Perform a receive operation. The terminal receives normally, and the display indicates:

   ```
     LOAD ORIGINALS FACE DOWN
     TIME                        DATE
   ```

   Y   N
   | Replace in order: G3 PWB, modem PWB, main PWB.

10. The image quality received is acceptable (refer to Image Quality Section 3).
    Y   N
    | Perform RAP 2.16.

11. Customer problem has been resolved.
    Y   N
    | Go to Additional Checks in section 1.3.4 to select appropriate test.

12. Go to Final Actions.

1.3.4 Additional Checks

1. Locate the suspect option or feature that best describes the problem you are having, then perform the RAP listed in the solution column.

   NOTE: If your problem is not listed, contact additional technical support.

Suspect Option or Feature	Solution
ADF (feeds multiple originals)	RAP 2.11
Auxiliary paper tray malfunction	RAP 8.2A.1
Encryption interface malfunction	RAP 8.2C.1
Excessive donor film usage	RAP 2.15
False jam indication (error code) in scanner or printer	RAP 2.20
Hard disk drive malfunction	RAP 8.2B.1
Improper or no reduction when receiving	RAP 2.23
Keypad key does not function (DTMF)	RAP 2.21
Paper jams in area #1	RAP 2.12
Paper jams in area #2	RAP 2.13
Paper jams in area #3	RAP 2.14
RS-232 interface malfunction	RAP 8.2C.2

1.4 Final Actions

1. Disconnect the power cord and remove the rear terminal cover (REP 4.1.7).

2. Clean the video assembly glass.

   a. Moisten a soft, lint free cloth or paper towel with Xerox Lens and Mirror Cleaner, and clean the glass.

NOTE: Use Xerox CLEAN-UPS to perform the following cleaning functions.

CAUTION
Switch and sensor actuators are located near the rollers. Use care not to damage actuators when cleaning these components.

3. Clean the following scanner rollers.

   NOTE: Rotate the input drive roller pulley by hand to clean drive roller surfaces.

   a. ADF belt

   b. Retard roller

   c. Input drive roller

   d. Output drive roller

   e. Platen roller

   f. Input and output idler rollers.

4. Clean the following printer rollers.

   NOTE: Remove the donor film cartridge, then rotate the upper printer hinge shaft pulley by hand to clean roller surfaces.

   a. Pressure roller (upper printer)

   b. Output drive and idler roller (upper printer)

   c. Paper output roller #1 (below scanner, accessible from printer side)

   d. Paper output roller #2 (below scanner, accessible from output tray side)

5. Clean the following paper feed rollers:

   a. Paper input roller #1

   b. Paper input roller #2

   c. Feed rollers

6. Install the rear terminal cover and connect the power cord.

7. Enter the service mode and print an options report (Service Test 04) for future reference.

8. Compare the report with the options report printed during Prepare for System Checks (if available), and ensure the present configuration agrees with the original customer configuration.

9. Verify correct operation of terminal.

10. Ensure the terminal is not in the service mode.

11. Install all covers and clean exterior of terminal.

12. Complete all required administrative tasks.

2. Status Indicator Repair Analysis Procedures

Repair Analysis Procedures

Section Contents

Introduction

The Primary Error Code List should be used whenever an error code occurs during a terminal operation or a self test. The list identifies a replaceable component (or components) for a code, or directs you to perform a RAP to isolate the problem.

If an operation fails, sometimes the terminal will generate a four-digit sub code, rather than a primary error code. When this occurs, you should refer to the Sub to Primary Error Code Cross Reference to identify the related primary code, then repair the problem according to that code.

The Repair Analysis Procedures (RAP) section is used to isolate an identified problem to a faulty component or subassembly. This section is accessed through Section 1, Service Call Procedures. Because the RAPs are built on one another, you should not use them without going through Section 1 first.

Some of the RAPs require you to measure voltages to isolate a problem. When voltage test points are provided, connect the red meter lead to the first test point, and connect the black meter lead to the second test point.

NOTE: All meter ranges and readings are referenced to the Xerox digital meter (600T1616). These ranges and readings may not be valid with other meters.

When a problem has been isolated to a faulty component or subassembly, first check for loose, bent, or dirty connections as the cause of the problem. If one of these is the cause, always attempt to resolve the problem by tightening connections, straightening bent pins, or cleaning contacts prior to replacing components.

CAUTION
To prevent damage to the hard disk drive, disconnect the power cord and wait ten to fifteen seconds before moving the terminal.

Primary Error Code List

COXX Error Codes

Code	Corrective action
C001	(USO) Replace modem PWB, G3 PWB. (RX) Replace modem PWB, G3 PWB, coupler PWB.
C002	(USO) Replace G3 PWB, modem PWB. (RX) Replace coupler PWB, G3 PWB, modem PWB.
C003	(USO) Replace G3 PWB. (RX) Replace coupler PWB, G3 PWB.
C004	Replace G3 PWB.
C005	Perform RAP 2.4.
C011	Replace G3 PWB, main PWB.

EXXX Error Codes

Code	Corrective action
E003	Replace main PWB.
E004	Replace main PWB.
E013	Replace main PWB.
E014	Replace main PWB.
E020	(RX) Replace G3 PWB, coupler PWB.
E021	(RX) Replace G3 PWB, coupler PWB.
E022	(RX) Replace G3 PWB, coupler PWB.
E026	Replace main PWB.
E027	Perform RAP 2.7.
E028	Replace main PWB.
E029	Replace main PWB.
E032	Replace G3 PWB, Modem PWB.
E033	Replace G3 PWB, Modem PWB.
E035	Perform RAP 2.16.
E036	Perform RAP 2.16.
E042	Replace G3 PWB, modem PWB.
E060	Replace main PWB.
E061	Replace main PWB.
E200	Perform RAP 2.16.
E201	Perform RAP 2.16.
E203	Perform RAP 2.16.
E204	Perform RAP 2.16.
E205	Perform RAP 2.16.
E206	Perform RAP 2.16.

EXXX Error Codes (continued)

Code	Corrective action
E211	Perform RAP 2.16.
E212	Perform RAP 2.16.
E213	Perform RAP 2.16.
E220	Perform RAP 2.16.
E221	Perform RAP 2.16.
E222	Perform RAP 2.16.
E223	Perform RAP 2.16.
E233	Perform RAP 2.16.
E234	Perform RAP 2.16.
E235	Perform RAP 2.16.
E240	Perform RAP 2.16.
E241	Perform RAP 2.16.
E242	Perform RAP 2.16.
E243	Perform RAP 2.16.
E244	Perform RAP 2.16.
E245	Perform RAP 2.16.
E246	Perform RAP 2.16.
E247	Perform RAP 2.16.
E248	Perform RAP 2.16.
E250	Perform RAP 2.16.
E251	Perform RAP 2.16.
E252	Perform RAP 2.16.
E253	Perform RAP 2.16.
E254	Perform RAP 2.16.
E255	Perform RAP 2.16.
E256	Perform RAP 2.16.
E257	Perform RAP 2.16.
E260	Perform RAP 2.16.
E261	Perform RAP 2.16.
E262	Perform RAP 2.16.
E263	Perform RAP 2.16.
E265	Perform RAP 2.16.
E266	Perform RAP 2.16.
E270	Perform RAP 2.16.
E405	Perform RAP 8.2.4.
E406	Perform RAP 8.2.4.
E407	Perform RAP 8.2.4.
E420	Replace RS232 cable, RS232, PWB, check host

EXXX Error Codes (continued)

Code	Corrective action
E440	Replace RS232 PWB, option PWB, mainPWB
E441	Replace RS232 PWB, option PWB, mainPWB
E442	Replace RS232 PWB, option PWB, mainPWB
E443	Replace RS232 PWB, option PWB, mainPWB
E600	Replace video assembly, main PWB.
E601	Replace video assembly, main PWB.
E603	Replace main PWB.
E604	Replace main PWB.
E611	Replace main PWB.
E804	Replace main PWB.
E812	Replace main PWB.
E813	Perform RAP 2.15.
E840	Replace main PWB.

FCXX Error Codes

Code	Corrective action
FC01	Replace main PWB.
FC02	Replace main PWB.
FC05	Replace main PWB.
FC06	Replace main PWB.
FC07	Replace main PWB.
FC08	Replace main PWB.
FC09	Replace main PWB.
FC10	Replace main PWB.
FC11	Replace main PWB.
FC12	Replace main PWB.
FC13	Replace main PWB.
FC14	Replace main PWB.
FC15	Replace main PWB.
FC16	Replace main PWB.
FC17	Replace main PWB.
FC18	Replace main PWB.
FC19	Perform RAP 2.5.
FC20	Replace main PWB.

FCXX Error Codes (continued)

Code	Corrective action
FC21	Replace RAM/ROM PWB.
FC22	Replace RAM/ROM PWB.
FC23	Replace RAM/ROM PWB.
FC24	Replace RAM/ROM PWB.
FC25	Replace RAM/ROM PWB.
FC26	Replace main PWB.
FC27	Replace main PWB.
FC28	Replace G3 PWB.
FC29	Replace G3 PWB.
FC30	Replace modem PWB, G3 PWB.
FC31	(USO) Replace G3 PWB. (RX) Replace coupler PWB, G3 PWB.
FC36	Replace memory expansion PWB.
FC37	Replace main PWB.
FC39	Replace hard disk interface PWB.
FC40	Replace hard disk interface PWB.
FC41	Replace hard disk drive.
FC42	Replace hard disk drive.
FC43	Replace main PWB.
FC50	Replace main PWB.
FC51	Replace main PWB.
FC52	Replace main PWB.
FC53	Replace main PWB.
FC54	Replace RAM/ROM PWB.
FC55	Replace hard disk interface PWB.
FC56	Replace hard disk drive.
FC57	Replace hard disk drive.
FC58	Replace main PWB.
FC59	Replace memory expansion PWB.
FC60	Replace RAM/ROM PWB.
FC61	Replace hard disk interface PWB.
FC62	Replace hard disk drive.
FC63	Replace hard disk drive.
FC70	Replace RS232 PWB.
FC71	Replace RS232 PWB.
FC72	Replace RS232 PWB.
FC73	Replace RS232 PWB.
FC74	Replace RS232 PWB.
FC75	Replace RS232 PWB.

FCXX Error Codes (continued)

Code	Corrective action
FC76	Replace RS232 PWB.
FC77	Replace RS232 PWB.
FC78	Replace RS232 PWB.

FPXX Error Codes

Code	Corrective action
FP00	Replace main PWB, RS232 PWB, Option PWB
FP01	Replace RAM/ROM PWB.
FP02	Replace RAM/ROM PWB.
FP03	Replace main PWB.
FP04	Replace main PWB.
FP05	Replace main PWB.
FP06	Replace RAM/ROM PWB.
FP07	Replace main PWB.
FP08	Replace main PWB, RAM/ROM PWB.
FP09	Replace main PWB.
FP10	Perform RAP 2.6.
FP11	Replace main PWB.
FP13	Replace main PWB.
FP14	Replace main PWB.
FP15	Replace main PWB.
FP16	Replace main PWB.
FP17	Replace main PWB, G3 PWB.
FP18	Replace main PWB.
FP19	Replace main PWB.
FP20	Replace main PWB.
FP21	Replace main PWB.
FP22	Replace main PWB.
FP23	Replace main PWB.
FP24	Replace main PWB.
FP25	Replace main PWB.
FP26	Replace main PWB.
FP28	Replace main PWB, G3 PWB.
FP29	Replace control panel PWB, main PWB.
FP30	Replace main PWB, G3 PWB.
FP31	Replace main PWB, G3 PWB.
FP33	Replace G3 PWB.

FPXX Error Codes (continued)

Code	Corrective action
FP34	Replace G3 PWB.
FP35	Replace G3 PWB.
FP36	Replace G3 PWB.
FP37	Replace G3 PWB.
FP38	Replace G3 PWB.
FP39	Replace G3 PWB.
FP40	Replace G3 PWB, modem PWB.
FP41	Replace main PWB, G3 PWB.
FP42	Replace main PWB, G3 PWB.
FP43	Replace main PWB.
FP44	Replace main PWB.
FP46	Replace G3 PWB, modem PWB.
FP48	Replace main PWB, G3 PWB.
FP49	Replace main PWB, G3 PWB.
FP50	Replace main PWB.
FP51	Replace main PWB, G3 PWB.
FP53	Replace G3 PWB, modem PWB.
FP54	Replace main PWB.
FP55	Replace main PWB.
FP56	(RX) Replace G3 PWB, coupler PWB.
FP57	Replace main PWB.
FP59	Replace G3 PWB.
FP60	Replace main PWB, RS232 PWB, Option PWB
FP61	Replace main PWB.
FP62	Replace RS-232 interface, option mother PWB, main PWB
FP63	Replace main PWB.
FP64	Replace option mother PWB, hard disk interface PWB, hard disk drive.
FP65	Replace main PWB
FP66	Replace main PWB
FP67	Replace main PWB
FP68	Replace main PWB
FP69	Replace main PWB
FP70	Replace main PWB, RS232 PWB

OPXX Error Codes

Code	Message on display	Corrective action
OP00	OPERATION ERROR- CONSULT MANUAL OP00	Perform System Check.
OP01	PLEASE CHECK PAPER SIZE- TRY OPERATION AGAIN OP01	Check paper size in tray. Check/replace upper (or lower) tray paper size sensor (RAP 2.20).
OP01	THIS LOCAL MAILBOX OPTION IS NOT PERMITTED WITHIN A GROUP OP01	NOTE: Error when loading document into multi mailbox groups. Load mailbox not within a group.
OP03	TELEPHONE NUMBER ENTERED INCORRECTLY PLEASE REMOVE ANY # OR * -TRY AGAIN OP03	Verify correct telephone number entry. Perform System Check.
OP05	MEMORY IS FULL CALL KEY OPERATOR OP05	Check the quantity of originals and the quantity of remaining memory. Perform System Check.
OP06	THERE IS NO INFORMATION AVAILABLE TO REPORT OP06	Perform System Check.
OP10	JOB CARD NOT DETECTED-PLEASE RELOAD JOB IN INPUT TRAY OP10	Check/replace scan position sensor (RAP 2.20).
OP12	JOB CARD NUMBER DETECTED DOES NOT MATCH NUMBER IN JOB MEMORY-PLEASE MATCH OP12	Check/replace scan position sensor (RAP 2.20).
OP13	JOB CARD IS WORN- PLEASE REPLACE WITH NEW JOB CARD OP13	Check/replace scan position sensor (RAP 2.20).
OP15	POSSIBLE JOB CARD JAM IN SCANNER- CONSULT MANUAL OP15	Clean ADF belt and input/output drive rollers. Check/replace scan position sensor.
OP17	JOB CARD IS WORN- PLEASE REPLACE WITH NEW JOB CARD OP17	Check/replace scan position sensor (RAP 2.20).
OP22	NO DOCUMENT DETECTED IN ADF- RELOAD ORIGINALS AND TRY OPERATION AGAIN OP22	Check/replace ADF document sensor (RAP 2.20).
OP23	DOCUMENT IN SCANNER- PLEASE CLEAR SCANNER OP23	Check/replace ADF document sensor, scan position sensor (RAP 2.20).
OP24	MISFEED IN ADF- CLEAN FEED BELT AND TRY AGAIN OP24	Clean/replace ADF belt. Check/replace scan position sensor (RAP 2.20).

Code	Message on display		Corrective action
OP25	LONG ORIGINAL OR POSSIBLE JAM IN SCANNER CONSULT MANUAL	OP25	Check/replace scan position sensor (RAP 2.20).
OP30	REPLACE IMAGING- DONOR FILM ROLLS SEE OPERATOR GUIDE FOR INSTRUCTIONS	OP30	Check donor out sensor. Check/replace donor out sensor (RAP 2.20).
OP31	OUT OF PAPER- PLEASE FILL UPPER PAPER TRAY	OP31	NOTE: *Error occurs only when auxiliary tray is installed.* Check/replace paper out sensor (RAP 2.20).
OP31	OUT OF PAPER- PLEASE FILL LOWER PAPER TRAY	OP31	NOTE: *Error occurs only when auxiliary tray is installed.* Check/replace auxiliary tray paper out sensor (RAP 2.20).
OP31	OUT OF PAPER- PLEASE FILL BOTH PAPER TRAYS	OP31	NOTE: *Error occurs only when auxiliary tray is installed.* Check/replace both paper out sensors (RAP2.20), replace main PWB.
OP31	OUT OF PAPER- PLEASE FILL PAPER TRAY	OP31	Check/replace paper out sensor (RAP 2.20).
OP32	PAPER LOW- PLEASE FILL UPPER PAPER TRAY	OP32	NOTE: *Error occurs only when auxiliary tray is installed.* Check/replace low paper sensor (RAP 2.20).
OP32	PAPER LOW- PLEASE FILL LOWER PAPER TRAY	OP32	NOTE: *Error occurs only when auxiliary tray is installed.* Check/replace auxiliary tray low paper sensor (RAP 2.20).
OP32	PAPER LOW- PLEASE FILL BOTH PAPER TRAYS	OP32	NOTE: *Error occurs only when auxiliary tray is installed.* Check/replace both low paper sensors (RAP 2.20), replace main PWB.
OP32	PAPER LOW- PLEASE FILL PAPER TRAY	OP32	Check/replace low paper sensor (RAP 2.20).

OPXX Error Codes (continued)

Code	Message on display		Corrective action
OP33	MISFEED OR JAM IN AREA 1 PLEASE CHECK/CLEAR	OP33	Perform RAP 2.12.
OP33	PAPER JAM IN AREA 2- PLEASE CHECK/CLEAR	OP33	Perform RAP 2.13.
OP34	MISFEED OR JAM IN AREA 1 PLEASE CHECK/CLEAR	OP34	Perform RAP 2.12.
OP35	PAPER JAM IN AREA 2- PLEASE CHECK/CLEAR	OP35	Perform RAP 2.13.
OP36	PAPER JAM IN AREA 3- PLEASE CHECK/CLEAR	OP36	Perform RAP 2.14.
OP37	PAPER JAM IN AREA 2- PLEASE CHECK/CLEAR	OP37	Perform RAP 2.13.
OP38	PAPER JAM IN AREA 3- PLEASE CHECK/CLEAR	OP38	Perform RAP 2.14.
OP46	LOWER PAPER TRAY IS NOT SET- PLEASE CHECK PAPER TRAY	OP46	*NOTE: Error occurs only when auxiliary tray is installed.* Check position of paper size sensor actuators on auxiliary paper tray. Check/replace auxiliary tray paper size sensor (RAP 2.20). Check paper tray set-up in Section 6.
OP46	UPPER PAPER TRAY IS NOT SET- PLEASE CHECK PAPER TRAY	OP46	*NOTE: Error occurs only when auxiliary tray is installed.* Check position of paper size sensor actuators on paper tray. Check/replace paper size sensor (RAP2.20). Check paper tray set-up in Section 6.
OP46	PAPER TRAYS ARE NOT SET- PLEASE CHECK BOTH PAPER TRAYS	OP46	*NOTE: Error occurs only when auxiliary tray is installed.* Check paper size sensor actuators on both trays. Check/replace both paper size sensors (RAP 2.20), replace main PWB. Check paper tray set-up in Section 6.

OPXX Error Codes (continued)

Code	Message on display	Corrective action
OP46	PAPER TRAY IS NOT SET- PLEASE CHECK PAPER TRAY OP46	*NOTE: Error occurs only when auxiliary tray is installed.* Check position of paper size sensor actuators on paper tray. Check/replace paper size sensor (RAP2.20). Check paper tray set-up in Section 6.
OP49	BLANK DISPLAY	Clear + Stop depressed during RS232 job. Try operation again.
OP50	BLANK DISPLAY	RS232 job abandoned due to power interuption
OP51	BLANK DISPLAY	RS232 scan pause abanded because document (s) were removed from the ADF
OP62	CALL UNSUCCESSFUL WAITING FOR AUTO REDIAL ATTEMPT AUTO REDIAL ATTEMPTS UNSUCCESSFUL PLEASE TRY AGAIN-CHECK WITH REMOTE OP62	Perform RAP 2.16.
OP64	CALL UNSUCCESSFUL WAITING FOR AUTO REDIAL ATTEMPT AUTO REDIAL ATTEMPTS UNSUCCESSFUL PLEASE TRY AGAIN-CHECK WITH REMOTE OP64	Perform RAP 2.16.
OP65	CALL UNSUCCESSFUL WAITING FOR AUTO REDIAL ATTEMPT AUTO REDIAL ATTEMPTS UNSUCCESSFUL PLEASE TRY AGAIN-CHECK WITH REMOTE OP65	Perform RAP 2.16.
OP66	CALL UNSUCCESSFUL WAITING FOR AUTO REDIAL ATTEMPT AUTO REDIAL ATTEMPTS UNSUCCESSFUL PLEASE TRY AGAIN-CHECK WITH REMOTE OP66	Perform RAP 2.16.

Code	Message on display	Corrective action
OP67	REMOTE WAS BUSY WAITING FOR AUTO REDIAL ATTEMPT REDIAL COMPLETED- REMOTE STILL BUSY PLEASE TRY AGAIN- CHECK WITH REMOTE OP67	Perform RAP 2.16.
OP68	TELEPHONE HANDSET IS OFF HOOK- RESEAT HANDSET- CONSULT MANUAL OP68	Perform RAP 2.16.
OP69	COMMUNICATIONS ERROR- PLEASE TRY AGAIN OP69	Perform RAP 2.16.
OP70	UNABLE TO COMPLETE OPERATION- SECURE ID MISMATCH OR STOP PRESSED AT REMOTE OP70	Perform RAP 2.16.
OP71	UNABLE TO RECEIVE- REMOTE NOT READY PLEASE CHECK WITH REMOTE OPERATOR OP71	Perform RAP 2.16.
OP73	REMOTE CANNOT RECEIVE- PLEASE CHECK WITH REMOTE OPERATOR OR TRY AGAIN OP73	Perform RAP 2.16.
OP74	OPERATOR DID NOT RESPOND TO RECALL - JOB WAS CNACELLED OP74	Operator did not respond to reduction request from terminal. Try operation again.
OP76	ERROR DETECTED- TRY OPERATION AGAIN- CONSULT MANUAL OP76	Perform RAP 2.16.
OP77	UNABLE TO COMPLETE OPERATION- SECURE ID MISMATCH OR STOP PRESSED AT REMOTE OP77	Perform RAP 2.16.
OP78	CALL FOR VOICE REQUEST WAS NOT HONORED - THE JOB WAS NOT COMPLETED OP78	Time allotted for voice request operation expired without a connection being established. Try operation again.
OP80	SCANNER COVER IS OPEN- PLEASE CLOSE COVER OP80	Check/replace scan interlock switch (RAP 2.20).
OP81	PRINTER COVER IS OPEN- PLEASE CLOSE COVER OP81	Check/replace printer interlock switch (RAP 2.20).
OP83	RIGHT HAND COVER IS OPEN- PLEASE CLOSE COVER OP83	Check/replace right cover latch switch (RAP 2.20).

Code	Message on Reports	Corrective Action
8710	HARD DISK FAILURE - POWER INTERRUPTION 8710	Perform RAP 8.2.B.1

Sub to Primary Error Code
Cross Reference

Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code
0020	OP05	020F	E804	0238	OP74	028C	E029	02CC	E235
0021	OP25	0210	E029	0239		028D	OP01	02CD	
0022	OP65	0211	E029	023A	OP25	028E	E840	02D0	E027
0023		0212		0240	E027	028F		02D1	
0024		0213	OP00	0241		0290	OP22	02D2	
0025		0214	E600	0242		0291	OP25	02D3	
0026	OP67	0215	E601	0243		02A1	E027	02D4	
0027	OP65	0216	E603	0244		02A2		02D5	
0028		0217	E604	0245		02A3		02D6	
0029		0218	OP00	0246		02A4		02D7	E027
002A		0219		0247		02A5		02D8	
002B	OP12	021A	E027	0248		02A6		02D9	
002C	OP67	021B	E026	0249		02A7		02DA	
002D	OP66	021C	E027	0260	OP01	02A8		02DB	
002E	OP62	021D	OP12	0261		02A9		02DC	
002F	OP64	021E	OP10	0262		02AA		02DD	
0060	E035	0220	E203	024A	E027	02AB	E027	0300	E060
00A0	OP50	0221	OP71	024B		02AC		0301	
00A1	OP51	0222	OP73	024C		02AD	E027	0302	E060
0120	E804	0223	E205	024D		02AE		0303	
0121	E220	0224	E212	024E	E026	02AF		0304	
0122	E222	0225	E260	024F	OP06	02B0		0305	
0123	E221	0226	E261	0271	E405	02B1		0310	E061
0140	0P63	0227	OP73	0272	E405	02B2		0330	E812
0200	E027	0228		0273	E406	02B3		0352	OP46
0201		0229		0274	E407	02B4		0353	
0202		022A		0275		02B5		0354	
0203		022B		0276		02C0	E233	0355	OP33
0204		022C	E029	0280	E027	02C1	OP73	0356	
0205		022D		0281		02C2	OP69	0357	OP35
0206		022E	OP70	0282		02C3	E270	0359	OP36
0207		0230	E029	0283		02C4	E234	035A	OP81
0208		0231		0284		02C5	E235	035B	OP83
0209		0232		0285		02C6	E235	035C	OP34
020A		0233		0286		02C7		035D	
020B		0234	OP78	0287		02C8		035F	OP37
020C		0235		0288		02C9		0360	OP30
020D		0236	OP77	0289	E804	02CA		0361	OP32
020E	OP80	0237		028A	E026	02CB	E035	0362	
				028B	E027				

Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code
0363	OP31	03D1	E027	03FB	E027	051C	E223	0546	OP66
0364		03D2		03FC		051D	E240	0548	OP04
0365		03D3		03FD		051E	E241	0549	OP64
036B	OP24	03D4		03FE		051F	E242	054A	OP63
036C	OP22	03D5		03FF		0520	E243	054E	OP66
036D	OP23	03D6		0400		0521	E244	054F	E270
036E	OP80	03D7		0401		0522	E245	0550	E020
036F	OP13	03D8		0402	E027	0523	E246	0551	E021
0370	OP17	03D9		0403		0524	E247	0552	E022
0371		03DA		0404		0525	E248	0553	
0372	OP15	03DB	E027	0405		0526	E250	0554	
0373	OP25	03DC		0410		0527	E251	0555	
0379	E004	03DD		0411		0528	E252	0557	E035
037A	E014	03DE		0412		0529	E253	0558	OP03
037B	E013	03DF		0413		052A	E254	0559	E200
037E		03E0		0414		052B	E255	055A	OP66
0380	E004	03E1	E027	0415	E027	052C	E256	055B	
0381	E003	03E2		0420		052D	E257	055C	
0382		03E3		0421		052E	E260	055D	
0383		03E4		0422		052F	E262	055E	
0384				0423		0530	E261	055F	
0385	E003	03E5	E027	0424		0531	E263	0560	
0388	OP46	03E6		0425		0532	E204	0561	OP65
038A	OP38	03E7	E027	0430	E027	0533	E206	0562	
038B	OP32	03E8		0431		0534	E265	0563	
038C		03E9		0432		0535	E042	0564	
038D	OP31	03EA		0433		0536	E033	0565	OP67
038E	E028	03EB		0434		0538	E032	0566	OP65
038F		03EC		0435		053B	OP76	0567	
0390		03ED		0510	E200	053C	E266	0568	
0392	E003	03EE		0511	E201	053D	OP73	0569	
0393	E028	03F0		0512	E203	053E	OP71	0600	OP49
0396	E812	03F1		0513	E204	053F	OP77	0620	E420
0397		03F2		0514	E205	0540	E035	0640	E440
0398	E813	03F3		0515	E210	0541		0660	E441
0399	E611	03F4		0516	E211	0542	E036	0680	E442
039A		03F5		0517	E212	0543	OP68	06A0	E443
039B	OP24	03F6		0518	E213	0544		1220	E203
		03F7		0519	E220	0545	OP67	1510	E200
		03F8		051A	E221			1511	E201
		03F9		051B	E222				
		03FA							

Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code	Sub Code	Primary Code
1512	E203	3142	FC12	3185	FC15	32EE	FC27	3332	FC27
1513	E204	3143		3186	FC16	32F0		3333	
1518	E213	3144		3187	FC17	32F1		3334	
151D	E240	3145		3188	FC18	32F2		3335	
151E	E241	3146		3189	FC14	32F3		3336	
151F	E242	3147		318A	FC16	32F4		3337	
1524	E247	3148		318B	FC18	32F5		3340	
1531	E263	3149		3200	FC21	32F6		3341	FC26
1559	E200	314A		3201		32F7		3342	
3020	FC02	314B		3202		32F8		3343	
3021		314C		3203		32F9		3344	
3061	FC10	314D		3220	FC22	32FA		3345	
3062		314E	FC12	3221		32FB		3346	
3063		314F		3240	FC23	32FC	FC27	3347	
3080	FC05	3150		3241	FC51	32FD		3348	
3081		3151		3260	FC24	32FE		3349	
30A0	FC06	3152		3261		32FF		334A	
30A1		3153		3280	FC52	3300		334B	
30C0	FC07	3154		3281	FC25	3310		334C	
30C1		3155		3282		3311		3350	FC53
30E0	FC08	3156		32A0	FC01	3312		3351	FC54
30E1		3157		32A1	FC36	3313		3352	FC55
3100	FC09	3158	FC12	32A2	FC37	3314		3353	FC56
3101		3159		32A3		3315	FC27	3354	FC57
3120	FC11	315A		32A4		3316		3360	FC58
3121		315B		32A5		3317		3361	FC59
3122		315C		32E0	FC27	3318		3362	FC60
3123		315D		32E1		3319		3363	FC61
3124		315E		32E2		331A		3364	FC62
3125		315F		32E3		331B		3400	C011
3126		3160		32E4		331C		3405	C011
3127		3170	FC19	32E5		331D		3501	FC28
3128		3171		32E6	FC27	3320		3502	
3129	FC11	3172	FC20	32E7		3321	FC27	3503	
312A		3173		32E8		3322		3504	
312B		3174	FC50	32E9		3323		3505	
312C		3175		32EA		3324		3506	
312D		3183	FC13	32EB		3325			
3140	FC12	3184	FC14	32EC		3326			
3141				32ED		3330			
						3331			

Error Codes

Telecopier 7032 / 7033 Service Manual

Sub Code	Primary Code
3507	FC29
3508	FC30
3511	C001
3512	C002
3513	C003
3514	C004
3515	C005
3571	FC31
357F	
3600	FC70
3601	FC71
3602	FC72
3603	FC73
3604	FC74
3605	FC75
3606	FC76
3607	FC77
3608	FC78
3700	FC39
3701	FC41
3702	FC40
3703	FC42
3704	
3706	FC40
3708	FC43
3709	FC42
8000	FP43
8001	
8002	
8003	
8004	
8005	
8006	
8007	
8008	
8009	

Sub Code	Primary Code
800A	FP43
800B	
800C	
800D	
800E	
800F	
8010	
8011	
8110	FP10
8111	
8112	
8113	
8114	
8115	
8116	FP10
8117	
8118	
8119	
811A	
8120	FP21
8121	
8122	
8123	
8124	
8125	
8130	FP29
8131	FP55
8132	
8133	
8134	
8235	
8136	FP29
8137	
8140	FP22
8141	
8142	

Sub Code	Primary Code
8150	FP23
8151	
8152	
8160	FP60
8151	
8152	
8190	FP24
8191	
8192	
8193	
8194	FP24
8198	
819A	FP24
819B	
819C	
819D	
819E	FP24
819F	
81A0	FP69
81A1	
81A2	
81A3	
8230	FP25
8241	FP44
8242	
8250	FP66
8251	
8252	
8253	FP66
8254	
8255	
8256	
8257	
8258	
8290	FP54

Sub Code	Primary Code
8291	FP57
8292	
8293	
8294	
8295	
8296	
8297	
8298	FP54
8299	
829A	FP57
8300	FP11
8310	FP01
8311	
8312	FP59
8320	FP02
8321	FP03
8322	
8330	FP04
8331	FP05
8332	
8340	FP07
8341	
8342	FP06
8350	FP09
8351	FP08
8352	FP09
8353	FP08
8354	FP09
8360	FP13
8361	
8362	
8363	
8364	
8365	
8366	
8367	

Sub Code	Primary Code
8368	FP13
8369	
836A	
836B	
836C	FP13
836D	
836E	
836F	
8370	
8371	
8372	
8373	
8374	
8380	FP14
8390	FP15
8391	
8392	
83A0	FP16
83A1	
83A2	
83A3	
83A4	
83A5	FP16
83B0	FP18
83B1	FP17
83B2	
83B3	
83B4	
83B5	FP18
83B6	
83C0	FP19
83C1	
83D0	FP20
83D1	
8460	FP68
8461	

Sub Code	Primary Code
84A5	FP26
84A6	
84A7	FP67
84A8	
84A9	FP26
84AA	
84AB	
84AC	
84AD	
84B0	FP41
84B1	
84B2	
84B3	
84B4	
84B5	
84B6	
84B7	
84B8	FP41
84B9	
84C0	FP42
84C1	FP31
84C2	FP17
84D0	FP51
84D1	
84D2	
84D3	
84D4	
84D5	
84F0	FP50
84F1	
84F2	
84F3	
84F4	
8501	FP30
8503	FP53

Sub Code	Primary Code
8504	FP30
8505	
8506	
8507	
8508	
8509	
850A	FP28
850B	FP56
850C	FP30
8537	FP46
8539	FP48
853A	FP49
8580	FP33
8581	FP34
8582	FP35
8583	FP36
8584	FP37
8585	FP38
8586	FP39
8587	FP40
8600	FP60
8601	FP62
8602	FP60
8603	
8605	
8606	FP61
8607	
8700	FP63
8701	
8702	
8703	
8704	
8705	
8710	FP64
8711	
8712	
F000	FP00
F0FF	

RAP 2.1 Blank Control Panel Display

WARNING
Improper connection of the grounding conductor can result in the risk of electrical shock. The following must be observed:

- **Never use a ground adapter plug to connect the terminal to a power source which does not have a ground connection.**

- **Never attempt any maintenance function which is not specifically called out in the service procedures.**

- **Never remove any covers which are fastened with screws, unless so instructed in the service procedures.**

CAUTION
If any of the voltage measurements are not as specified in the following steps, the cause must be corrected. Caution the customer not to connect the terminal to the wall outlet. Advise the customer that a licensed electrician must correct the wiring. Do not attempt to correct the wiring yourself. If you later find the condition has not been corrected, inform your manager in writing of the improper wiring.

1. Perform the following line voltage check.

   a. Disconnect the power cord from the wall outlet.

   b. **USO only** (Figure 1). Perform the following:

   - Measure the AC voltage between AC Hot and Neutral. Meter = 104 to 127 VAC.

   - Measure the AC voltage between the AC Neutral and GND. Meter = less than 3 VAC.

   RX, UK Only (Figure 2). Perform the following:

   - Measure the AC voltage between live and neutral and between live and earth. Meter = 216 to 264 VAC.

   - Measure the AC voltage between Neutral and Earth. Meter = less than 3 VAC.

   RX, Europe Only (Figure 3). Perform the following:

   - Measure the AC voltage between supply pins. Meter = 196 to 244 VAC.

   - Measure the AC voltage between one supply pin and earth. Meter = 196 to 244 VAC.

   - Measure the AC voltage between second supply pin and earth. Meter = 3 VAC or less.

The voltages are correct.
Y   N
 | Inform   the   customer   of insufficient voltage (or improper wiring).

USO
AC Neutral (ACN)
AC Hot (ACH)
GND
7033-100

Figure 1. USO Wall Outlet

RX Only
Earth
Neutral
Live
7033-101

Figure 2. RX UK Wall Outlet

RX Only
Earth
Supply pins
7033-102
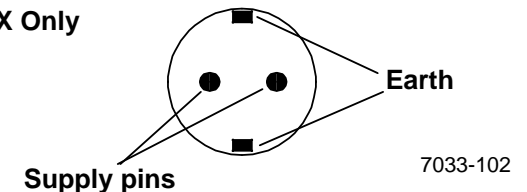
Figure 3. RX Europe Wall Outlet

2. Remove the power cord from terminal, and check the continuity through all connections of the power cord. The meter reads less than 10 ohms for each connection.
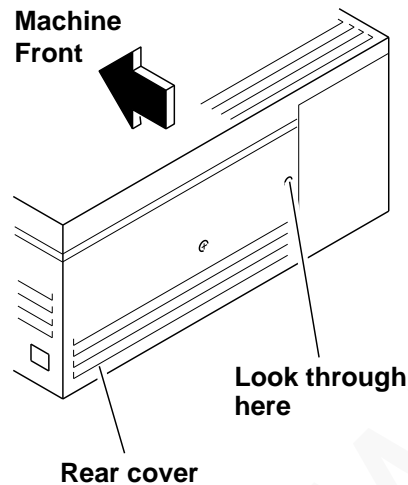
   Y   **N**

   | Replace the power cord.

3. Perform the following:

a. Connect the power cord to the wall outlet and the terminal.

b. Look through the hole in the rear cover (Figure 4).

The power supply LED is on steady.

   Y   **N**

   | Go to step 5.

4. Replace the control panel. If the problem still exists, replace the main PWB.

7033-104

Figure 4. LED access hole in rear cover

5. Perform the following:

a. Disconnect the power cord.

b. Remove the EMI shield (REP 4.1.8).

c. Disconnect P/J300 from the main PWB.

d. Connect the power cord.

The power supply LED comes on steady.

   Y   **N**

   | Go to step 7.

6. Go to RAP 2.2.

7. Perform the following:

a. Disconnect the power cord, and remove the power supply (REP 4.6.2).

b. Remove fuse F1 from the power supply, and measure the resistance of the fuse.

The meter reads less than 10 ohms.

   Y   **N**

   | Replace the fuse. If the fuse opens again, replace the power supply. If problem the still exists, contact the TSC.

8. Replace the power supply. If the problem still exists, contact the next level of support.

RAP 2.2 Load Isolation

1. Perform the following:

a. Disconnect the power cord.

b. Connect P/J300 at the main PWB.

c. Remove the RAM/ROM PWB and the G3 PWB.

d. If installed, remove any option PWBs and the option mother PWB.

e. Connect the power cord.

The power supply LED comes on steady.

   Y   **N**

   | Go to step 4.

2. Perform the following:

a. Disconnect the power cord.

b. One at a time, reinstall all the PWBs that were removed in steps 1c and 1d.

c. Connect the power cord, and check the power supply LED after installing each PWB.

The power supply LED comes on steady.

   Y   **N**

   | Replace the last PWB installed.

3. Go to Final Actions.

4. Perform the following:

a. Disconnect the power cord.

b. Disconnect the following P/J connectors from the main PWB.

101	107	110	400
103	108	111 (RX)	600
105	109		

2. Remove the power cord from terminal, and check the continuity through all connections of the power cord. The meter reads less than 10 ohms for each connection.

    Y   N
    | Replace the power cord.

3. Perform the following:

    a. Connect the power cord to the wall outlet and the terminal.

    b. Look through the hole in the rear cover (Figure 4).

    The power supply LED is on steady.

    Y   N
    | Go to step 5.

4. Replace the control panel. If the problem still exists, replace the main PWB.

Machine Front

Look through here

Rear cover

7033-104

Figure 4. LED access hole in rear cover

5. Perform the following:

    a. Disconnect the power cord.

    b. Remove the EMI shield (REP 4.1.8).

    c. Disconnect P/J300 from the main PWB.

    d. Connect the power cord.

    The power supply LED comes on steady.

    Y   N
    | Go to step 7.

6. Go to RAP 2.2.

7. Perform the following:

    a. Disconnect the power cord, and remove the power supply (REP 4.6.2).

    b. Remove fuse F1 from the power supply, and measure the resistance of the fuse.

    The meter reads less than 10 ohms.

    Y   N
    | Replace the fuse. If the fuse opens again, replace the power supply. If problem the still exists, contact the TSC.

8. Replace the power supply. If the problem still exists, contact the next level of support.

RAP 2.2 Load Isolation

1. Perform the following:

    a. Disconnect the power cord.

    b. Connect P/J300 at the main PWB.

    c. Remove the RAM/ROM PWB and the G3 PWB.

    d. If installed, remove any option PWBs and the option mother PWB.

    e. Connect the power cord.

    The power supply LED comes on steady.

    Y   N
    | Go to step 4.

2. Perform the following:

    a. Disconnect the power cord.

    b. One at a time, reinstall all the PWBs that were removed in steps 1c and 1d.

    c. Connect the power cord, and check the power supply LED after installing each PWB.

    The power supply LED comes on steady.

    Y   N
    | Replace the last PWB installed.

3. Go to Final Actions.

4. Perform the following:

    a. Disconnect the power cord.

    b. Disconnect the following P/J connectors from the main PWB.

101	107	110	400
103	108	111 (RX)	600
105	109		

c. Connect the power cord.

The power supply LED comes on steady.

Y   N

| Replace the main PWB. If the problem still exists, replace the power supply.

5. Perform the following:

a. Disconnect the power cord.

b. One at a time, reconnect the plugs that were disconnected in step 4b.

c. Connect the power cord, and check the power supply LED after reconnecting each plug.

When the power supply LED <u>does not</u> come on after reconnecting a plug, refer to Table 1, and replace the component(s) listed.

Once the suspect part is replaced, reconnect all plugs, and reinstall all PWBs, then perform the System Check to verify the repair.

Table 1. Load Isolation

P/J	Corrective Action
101	Disconnect the plugs from the following components (or their in-line connector), and replace the component that causes the power supply LED to remain off. • Scan position sensor • ADF document sensor • Area #3 jam sensor
103	Replace the control panel

Table 1. Load Isolation (Cont'd)

P/J	Corrective Action
105	Disconnect the plugs from the following components (or their in-line connector), and replace the component that causes the power supply LED to remain off. • Paper size sensor • Paper out sensor • Lower paper sensor
107	Replace the area #1 jam sensor.
108	Replace the thermal head down sensor.
109	Disconnect the plugs from the following components (or their in-line connector), and replace the component that causes the power supply LED to remain off. • B4 document size sensor • Donor out sensor • Area #2 jam sensor
110	Disconnect the plugs from the following components (or their in-line connector), and replace the component that causes the power supply LED to remain off. • Auxiliary tray low paper sensor • Auxiliary tray paper out sensor • Auxiliary tray paper size sensor

Table 1. Load Isolation (Cont'd)

P/J	Corrective Action
111	Disconnect the plugs from the following components (or their in-line connector), and replace the component that causes the power supply LED to remain off. • A3 document size sensor • Donor size sensor
400	Replace thermal head.
600	Replace video assembly.

RAP 2.3 Terminal Lock-Up

1. The terminal is inoperative and the display stays on POWER-ON CHECK.

   Y   N
   | Go to step 4.

2. Perform the following:

   a. Disconnect the power cord.

   b. Remove the rear PWB access cover.

   c. Disconnect all PWBs from the main PWB except the RAM/ROM PWB.

   d. Connect the power cord.

   After approximately five seconds, the display changes from POWER-ON CHECK to PLEASE WAIT.

   Y   N
   | Replace the RAM/ROM PWB. If the problem still exists, replace the main PWB.

3. Perform the following:

   a. Disconnect the power cord.

   b. One at a time, reconnect the PWBs that were disconnected in step 2c.

   c. Connect the power cord, and check for lock-up (stays on POWER-ON CHECK) after reconnecting each PWB.

   When the terminal locks-up at POWER-ON CHECK, replace the last PWB reconnected.

4. Perform the following:

   a. Disconnect the power cord.

   b. Remove the rear cover (REP 4.1.7).

   c. Remove the EMI shield (REP 4.1.8).

   d. Connect the power cord.

   e. Measure the following voltage at P/J300 on the main PWB (Figure 1).

   - pin 1 to pin 2 = 24 VDC ±2.4 VDC
   - pin 7 to pin 8 = 24 VDC ±2.4 VDC

   Both voltages are correct.

   Y   N
   | Go to step 6.

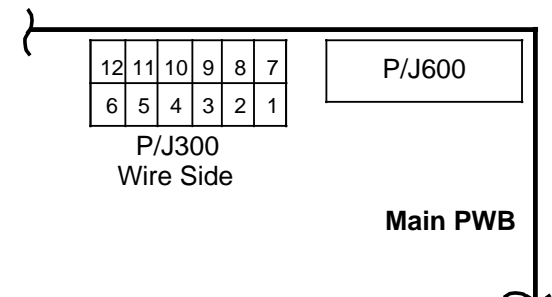5. Replace the main PWB. If the problem still exists, replace the RAM/ROM PWB.
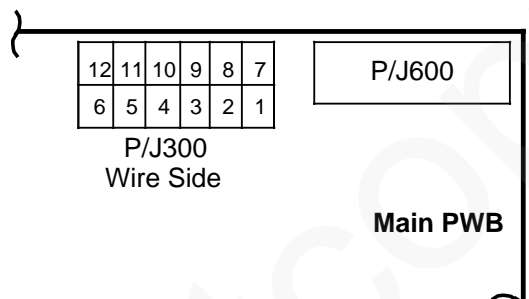
Figure 1. P/J300

6. Perform the following:

   a. Disconnect the power cord.

   b. Disconnect P/J300 from the main PWB.

   c. Connect the power cord, and measure the voltage that was not correct in step 4e.

   The voltage is now correct.

   Y   N
   | Replace the power supply.

7. Perform the following:

   a. Disconnect the power cord.

   CAUTION
   Wait until the power supply LED is off before connecting P/J300.

   b. Connect P/J300.

   c. Disconnect P/J102, P/J104 and P/J110 from the main PWB.

   d. If installed, remove the option mother PWB.

   e. Connect the power cord, and measure the voltage that was not correct in step 4e.

   The voltage is now correct.

   Y   N
   | Replace the G3 PWB. If the problem still exists, replace the main PWB.

8. Perform the following:

   a. Disconnect the power cord, and reconnect P/J102.

   b. Reconnect the power cord, and measure the voltage that was not correct in step 4e.

   The voltage is now correct.

   Y   N
   | Replace the nudger solenoid.

9. Perform the following:

   a. Disconnect the power cord.

   b. Reconnect P/J104.

   c. Connect the power cord, and measure the voltage that was not correct in step 4e.

   The voltage is now correct.

   Y   N
   | Replace the paper feed solenoid.

10. An auxiliary tray option is installed.

    Y   N
    | Perform the System Check.

11. Replace the auxiliary tray paper feed solenoid.

RAP 2.4 C005 Error Code

1. Perform the following:

   a. Disconnect the power cord.

   b. Remove the rear cover (REP 4.1.7).

   c. Remove the EMI shield (REP 4.1.8).

   d. Connect the power cord.

   e. Measure the voltage from pin 5 to pin 9 on the main PWB P/J300 (Figure 1).

   The voltage is 12 VDC ±1.2 VDC.
   Y   **N**
   | Go to step 3.

2. Replace the G3 PWB. If the problem still exists, replace the main PWB.
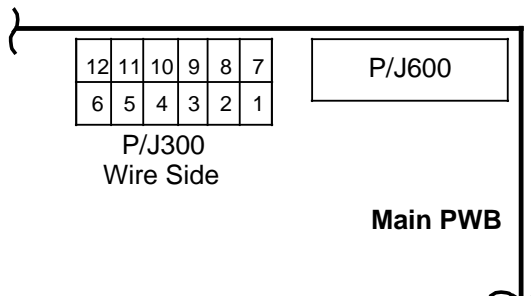
Figure 1. P/J300

3. Perform the following:

   a. Disconnect the power cord.

   b. Disconnect P/J300 from the main PWB.

   c. Connect the power cord, and measure the voltage from pin 5 to pin 9 on the main PWB P/J300.

   The voltage is 12 VDC ±1.2 VDC.
   Y   **N**
   | Replace the power supply.

4. Perform the following:

   a. Disconnect the power cord.

   CAUTION
   Wait until the power supply LED is off before connecting P/J300.

   b. Connect P/J300.

   c. Disconnect P/J600 from the main PWB.

   d. If RS-232 and/or encryption PWB are installed, remove them and the option mother PWB.

   e. Connect the power cord, and measure the voltage from pin 5 to pin 9 on the main PWB P/J300.

   The voltage is 12 VDC ±1.2 VDC.
   Y   **N**
   | Replace in order:
          • G3 PWB
          • modem PWB.
          • coupler PWB (RX only)
        If the problem still exists, replace the main PWB.

5. Perform the following:

   a. Disconnect the power cord, and reconnect P/J600.

   b. Reconnect the power cord, and measure the voltage from pin 5 to pin 9 on the main PWB P/J300.

   The voltage is 12 VDC ±1.2 VDC.
   Y   **N**
   | Replace the video assembly.

6. Replace the option PWB(s).

RAP 2.5 FC19 Error Code

1. Perform the following:

   a. Disconnect the power cord.

   b. Remove the rear cover (REP 4.1.7).

   c. Remove the EMI shield (REP 4.1.8).

   d. Connect the power cord.

   e. Measure the voltage from pin 6 to pin 9 on the main PWB P/J300 (Figure 1).

   The voltage is −12 VDC ±1.2 VDC.
   Y   **N**
   | Go to step 3.

2. Replace the video assembly. If the problem still exists, replace the main PWB.

Figure 1. P/J300

3. Perform the following:

   a. Disconnect the power cord.

   b. Disconnect P/J300 from the main PWB.

   c. Connect the power cord, and measure the voltage from pin 6 to pin 9 on the main PWB P/J300.

The voltage is –12 VDC ±1.2 VDC.
Y   N
| Replace the power supply.

4. Perform the following:

    a. Disconnect the power cord.

    CAUTION
    Wait until the power supply LED is off before connecting P/J300.

    b. Connect P/J300.

    c. Disconnect P/J600 and P/J103 from the main PWB.

    d. If RS-232 and/or encryption PWB are installed, remove them and the option mother PWB.

    e. Connect the power cord, and measure the voltage from pin 6 to pin 9 on the main PWB P/J300.

    The voltage is –12 VDC ±1.2 VDC.
    Y   N
    | Replace in order:
                  • G3 PWB
                  • modem PWB.
                  • coupler PWB (RX only)
                  If the problem still exists, replace the main PWB.

5. Perform the following:

    a. Disconnect the power cord, and reconnect P/J600.

    b. Reconnect the power cord, and measure the voltage from pin 6 to pin 9 on the main PWB P/J300.

    The voltage is –12 VDC ±1.2 VDC.
    Y   N
    | Replace the video assembly.

6. Perform the following:

    a. Disconnect the power cord, and reconnect P/J103.

    b. Reconnect the power cord, and measure the voltage from pin 6 to pin 9 on the main PWB P/J300.

    The voltage is –12 VDC ±1.2 VDC.
    Y   N
    | Replace the control panel.

7. Replace the option PWB(s).

RAP 2.6 FP10 Error Code

1. The RS-232 interface and/or hard disk drive option is installed.
    Y   N
    | Replace in order:
                  • G3 PWB
                  • control panel
                  • main PWB

2. Perform the following:

    a. Disconnect the power cord.

    b. Remove the option interface PWB(s).

    c. Connect the power cord, and perform a self test.

    The self test completes without an FP10 error.
    Y   N
    | Replace in order:
                  • G3 PWB
                  • control panel
                  • main PWB

3. The RS-232 interface was installed.
    Y   N
    | Go to step 6.

4. Perform the following:

    a. Disconnect the power cord.

    b. Reinstall the RS-232 Interface PWB.

    c. Connect the power cord, and perform a self test.

    The self test completes without an FP10 error.
    Y   N
    | Replace the RS-232 interface PWB.

5. Perform the System Check.

The voltage is –12 VDC ±1.2 VDC.
Y   **N**
| Replace the power supply.

4. Perform the following:

    a. Disconnect the power cord.

    CAUTION
    Wait until the power supply LED is off before connecting P/J300.

    b. Connect P/J300.

    c. Disconnect P/J600 and P/J103 from the main PWB.

    d. If RS-232 and/or encryption PWB are installed, remove them and the option mother PWB.

    e. Connect the power cord, and measure the voltage from pin 6 to pin 9 on the main PWB P/J300.

    The voltage is –12 VDC ±1.2 VDC.
    Y   **N**
    | Replace in order:
              • G3 PWB
              • modem PWB.
              • coupler PWB (RX only)
              If the problem still exists, replace the main PWB.

5. Perform the following:

    a. Disconnect the power cord, and reconnect P/J600.

    b. Reconnect the power cord, and measure the voltage from pin 6 to pin 9 on the main PWB P/J300.

    The voltage is –12 VDC ±1.2 VDC.
    Y   **N**
    | Replace the video assembly.

6. Perform the following:

    a. Disconnect the power cord, and reconnect P/J103.

    b. Reconnect the power cord, and measure the voltage from pin 6 to pin 9 on the main PWB P/J300.

    The voltage is –12 VDC ±1.2 VDC.
    Y   **N**
    | Replace the control panel.

7. Replace the option PWB(s).

RAP 2.6 FP10 Error Code

1. The RS-232 interface and/or hard disk drive option is installed.
    Y   **N**
    | Replace in order:
              • G3 PWB
              • control panel
              • main PWB

2. Perform the following:

    a. Disconnect the power cord.

    b. Remove the option interface PWB(s).

    c. Connect the power cord, and perform a self test.

    The self test completes without an FP10 error.
    Y   **N**
    | Replace in order:
              • G3 PWB
              • control panel
              • main PWB

3. The RS-232 interface was installed.
    Y   **N**
    | Go to step 6.

4. Perform the following:

    a. Disconnect the power cord.

    b. Reinstall the RS-232 Interface PWB.

    c. Connect the power cord, and perform a self test.

    The self test completes without an FP10 error.
    Y   **N**
    | Replace the RS-232 interface PWB.

5. Perform the System Check.

RAP 2.6

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6. Perform the following:

   a. Disconnect the power cord.

   b. Reinstall the hard disk interface PWB.

   c. Connect the power cord, and perform a self test.

   The self test completes without an FP10 error.
   Y   N
   | Replace the hard disk interface PWB.

7. Perform the System Check.

RAP 2.7 E027 Error Code

1. The memory expansion and/or disk drive option is installed.
   Y   N
   | Replace the main PWB. If the problem still exists, replace the RAM/ROM PWB.

2. Perform the following:

   b. Remove the option interface PWB(s).

   c. Connect the power cord, and perform a self test.

   The self test completes without an E027 error.
   Y   N
   | Replace the main PWB. If the problem still exists, replace the RAM/ROM PWB.

3. The hard disk drive option is installed.
   Y   N
   | Go to step 5.

4. Go to RAP 8.2B.1.

5. Perform the following:

   a. Disconnect the power cord.

   b. Install the memory expansion PWB.

   c. Connect the power cord, and perform a self test.

   The self test completes without an E027 error.
   Y   N
   | Replace the memory expansion PWB.

6. Perform the System Check.

RAP 2.8 Excessive Motor Noise During Print Cycle

1. Perform the following:

   a. Disconnect the power cord.

   b. Remove the rear cover (REP 4.1.7).

   c. Remove the lower front cover (REP 4.1.4).

   d. Inspect all belts, gears, and pulleys in the paper feed and printer areas.

   Mechanical components are in good condition (not broken, not worn, and free of surface cracks).
   Y   N
   | Replace defective component.

2. Perform the following:

   a. Manually rotate the pulley on the upper printer hinge shaft (rear frame).

   b. Observe the movement of the gears, belts, and pulleys in the printer and paper feed-out areas.

   Components move freely with no binding.
   Y   N
   | Repair/replace faulty belt, gear, and/or pulley.

3. Perform the following:

   a. Open the right side cover.

   b. Manually rotate the gear on the auxiliary tray drive assembly (rear frame).

   c. Observe the movement of the gears, belts, and pulleys in the paper feed area.

6. Perform the following:

    a. Disconnect the power cord.

    b. Reinstall the hard disk interface PWB.

    c. Connect the power cord, and perform a self test.

    The self test completes without an FP10 error.
    Y   N
    | Replace the hard disk interface PWB.

7. Perform the System Check.

RAP 2.7 E027 Error Code

1. The memory expansion and/or disk drive option is installed.
   Y   N
   | Replace the main PWB. If the problem still exists, replace the RAM/ROM PWB.

2. Perform the following:

    b. Remove the option interface PWB(s).

    c. Connect the power cord, and perform a self test.

    The self test completes without an E027 error.
    Y   N
    | Replace the main PWB. If the problem still exists, replace the RAM/ROM PWB.

3. The hard disk drive option is installed.
   Y   N
   | Go to step 5.

4. Go to RAP 8.2B.1.

5. Perform the following:

    a. Disconnect the power cord.

    b. Install the memory expansion PWB.

    c. Connect the power cord, and perform a self test.

    The self test completes without an E027 error.
    Y   N
    | Replace the memory expansion PWB.

6. Perform the System Check.

RAP 2.8 Excessive Motor Noise During Print Cycle

1. Perform the following:

    a. Disconnect the power cord.

    b. Remove the rear cover (REP 4.1.7).

    c. Remove the lower front cover (REP 4.1.4).

    d. Inspect all belts, gears, and pulleys in the paper feed and printer areas.

    Mechanical components are in good condition (not broken, not worn, and free of surface cracks).
    Y   N
    | Replace defective component.

2. Perform the following:

    a. Manually rotate the pulley on the upper printer hinge shaft (rear frame).

    b. Observe the movement of the gears, belts, and pulleys in the printer and paper feed-out areas.

    Components move freely with no binding.
    Y   N
    | Repair/replace faulty belt, gear, and/or pulley.

3. Perform the following:

    a. Open the right side cover.

    b. Manually rotate the gear on the auxiliary tray drive assembly (rear frame).

    c. Observe the movement of the gears, belts, and pulleys in the paper feed area.

Components move freely with no binding.

Y   **N**

| Repair/replace faulty belt, gear, and/or pulley.

4. The noise is most noticeable while the paper is feeding out of the paper tray.

Y   **N**

| Replace main PWB. If the problem still exists, replace the printer motor.

5. Replace the main PWB. If the problem still exists, replace the paper feed motor.

RAP 2.9 Excessive Motor Noise During Scan Cycle

1. Perform the following:

   a. Disconnect the power cord.

   b. Remove the rear cover (REP 4.1.7).

   c. Remove the lower front cover (REP 4.1.4).

   d. Inspect all belts, gears, and pulleys in the scan area.

   Mechanical components are in good condition (not broken, not worn, and free of surface cracks).

   Y   **N**

   | Replace defective component.

2. Perform the following:

   a. Manually rotate the pulley on the input drive roller shaft (rear frame).

   b. Observe the movement of the gears, belts, and pulleys in the scan area.

   Components move freely with no binding.

   Y   **N**

   | Repair/replace faulty belt, gear, and/or pulley.

3. Perform the following:

   a. Set the control panel on its bracket, and connect P/J190.

   b. Connect the power cord.

   c. Load approximately five originals in the document input tray.

   d. Enter the service mode, and perform Test 14, Original Feed Test.

Scanner operates without excessive noise.

Y   **N**

| Replace main PWB. If problem still exists, replace scan motor.

4. Perform the System Check.

Components move freely with no binding.

Y   N

| Repair/replace faulty belt, gear, and/or pulley.

4. The noise is most noticeable while the paper is feeding out of the paper tray.

   Y   N

   | Replace main PWB. If the problem still exists, replace the printer motor.

5. Replace the main PWB. If the problem still exists, replace the paper feed motor.

RAP 2.9 Excessive Motor Noise During Scan Cycle

1. Perform the following:

   a. Disconnect the power cord.

   b. Remove the rear cover (REP 4.1.7).

   c. Remove the lower front cover (REP 4.1.4).

   d. Inspect all belts, gears, and pulleys in the scan area.

   Mechanical components are in good condition (not broken, not worn, and free of surface cracks).

   Y   N

   | Replace defective component.

2. Perform the following:

   a. Manually rotate the pulley on the input drive roller shaft (rear frame).

   b. Observe the movement of the gears, belts, and pulleys in the scan area.

   Components move freely with no binding.

   Y   N

   | Repair/replace faulty belt, gear, and/or pulley.

3. Perform the following:

   a. Set the control panel on its bracket, and connect P/J190.

   b. Connect the power cord.

   c. Load approximately five originals in the document input tray.

   d. Enter the service mode, and perform Test 14, Original Feed Test.

Scanner operates without excessive noise.

Y   N

| Replace main PWB. If problem still exists, replace scan motor.

4. Perform the System Check.

RAP 2.10 Improper/No Document Feed through Scanner

1. Open the scanner, and inspect document path for obstructions. Document path is clear of obstructions.

   Y   **N**

   | Remove obstruction.

2. Manually actuate the ADF document sensor and scan position sensor. Sensor arms move freely.

   Y   **N**

   | Repair/replace sensor.

3. Check the platen roller and input/output idler rollers for smooth rotation.

   Y   **N**

   | Repair/replace roller(s).

4. Perform the following:

   a. Disconnect the power cord.

   b. Remove the rear cover (REP 4.1.7).

   c. Remove the front cover (REP 4.1.4).

   d. Set the control panel on its bracket, and connect P/J190.

   e. Connect the power cord, and enter the service mode.

   f. Load approximately five documents in the document input tray, and perform Service Test 14, Original Feed Test.

   Scan motor runs when test starts.

   Y   **N**

   | Replace the main PWB. If the problem still exists, replace the scan motor.

5. Observe movement of gears, belts, pulleys, and rollers while documents feed through scanner. Documents feed through scanner normally.

   Y   **N**

   | Repair/replace faulty belt, gear, pulley, and/or roller.

6. Perform the System Check.

RAP 2.11 Multiple-Sheet Feeds by ADF

1. Open the scanner, and check the plastic guide on the retard guide assembly. Guide is positioned properly and is not damaged.

   Y   **N**

   | Repair/replace plastic guide.

2. Perform the following:

   a. Clean the retard guide roller.

   b. Close the scanner, and enter the service mode.

   c. Load approximately five documents in the document input tray, and perform Service Test 14, Original Feed Test.

   Documents feed one at a time through scanner.

   Y   **N**

   | Go to Step 4.

3. Perform the System Check.

4. Perform the following:

   a. Remove the lower front cover (REP 4.1.4).

   b. Enter the service move.

   c. Load approximately five documents in the document input tray, and perform Service Test 14, Original Feed Test.

   d. Observe the ADF transfer gears and the retard roller drive gear (Figure 1) while documents feed through the scanner.

Gears turn freely, and mesh properly during document feed.

Y   N
| Replace gear(s).

5. Perform the System Check.

Machine Front

Input drive shaft gear

Retard roller drive gear

ADF clutch/gear

ADF transfer gears

7033-105

Figure 1. ADF transfer gears and retard roller drive gear

RAP 2.12 Area #1 Paper Jams

1. Perform the following:

   a. Remove the paper tray and open the printer and right side cover.

   b. Check the paper path for obstructions.

   Paper path is clear of obstructions.

   Y   N
   | Remove obstruction.

2. Inspect the feed shaft rollers, paper input roller #1, paper input roller #2, and idler rollers.   Rollers are clean, properly mounted, and are not worn.

   Y   N
   | Clean/replace rollers.

3. Perform the following:

   a. Manually rotate the auxiliary tray drive assembly gear (Figure 1).

   b. Observe rotation of rollers and drive belts in the paper feed area.

   Rollers rotate normally without excessive binding.

   Y   N
   | Replace faulty belt, pulley, and/or gear.

4. Perform the following:

   a. Enter the service mode, and perform Test 16, Sensors Test.

   b. Actuate and deactuate the area #1 jam sensor.

   The test indication (PIS) changes when the sensor is actuated and deactuated.

   Y   N
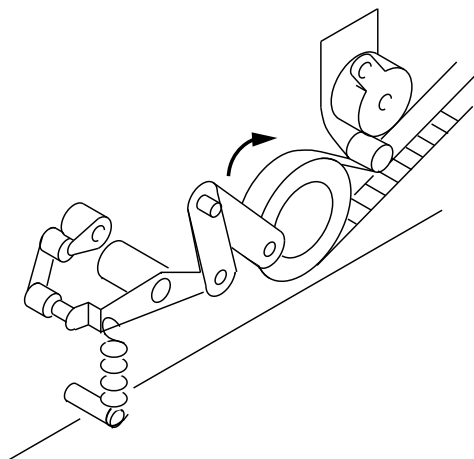 | Replace the area #1 jam sensor. If the problem still exists, replace the main PWB.

5. Perform a copy operation.   The paper feed motor runs at the beginning of the copy operation.

   Y   N
   | Replace the paper feed motor. If the problem still exists, replace the main PWB.

6. Replace the paper feed solenoid, If problem still exists, replace the clutch/ spring assembly.

Machine Front

View rotated 90° (rear frame, inside right cover)

7033-102

Figure 1. Auxiliary tray drive assembly gear

Gears turn freely, and mesh properly during document feed.

Y   N

| Replace gear(s).

5. Perform the System Check.

7033-105

Figure 1. ADF transfer gears and retard roller drive gear

RAP 2.12 Area #1 Paper Jams

1. Perform the following:

    a. Remove the paper tray and open the printer and right side cover.

    b. Check the paper path for obstructions.

    Paper path is clear of obstructions.

    Y   N

    | Remove obstruction.

2. Inspect the feed shaft rollers, paper input roller #1, paper input roller #2, and idler rollers.   Rollers are clean, properly mounted, and are not worn.

    Y   N

    | Clean/replace rollers.

3. Perform the following:

    a. Manually rotate the auxiliary tray drive assembly gear (Figure 1).

    b. Observe rotation of rollers and drive belts in the paper feed area.

    Rollers rotate normally without excessive binding.

    Y   N

    | Replace faulty belt, pulley, and/or gear.

4. Perform the following:

    a. Enter the service mode, and perform Test 16, Sensors Test.

    b. Actuate and deactuate the area #1 jam sensor.

    The test indication (PIS) changes when the sensor is actuated and deactuated.

    Y   N

    | Replace the area #1 jam sensor. If the problem still exists, replace the main PWB.

5. Perform a copy operation.   The paper feed motor runs at the beginning of the copy operation.

    Y   N

    | Replace the paper feed motor. If the problem still exists, replace the main PWB.

6. Replace the paper feed solenoid, If problem still exists, replace the clutch/ spring assembly.

7033-102

Figure 1. Auxiliary tray drive assembly gear

RAP 2.13   Area #2 Paper Jams

1. Perform the following:

   a. Open the printer, and ensure the donor film cartridge is properly seated on the supports.

   b. Check for paper path obstructions in the donor film area and under the scanner.

   Paper path is clear of obstructions.
   Y   **N**
   | Remove obstruction.

2. Inspect the pressure roller and the input/output idler rollers. Rollers are clean, properly mounted, and are not worn.
   Y   **N**
   | Clean/replace roller(s).

3. Perform the following:

   a. Enter the service mode, and perform Test 16, Sensor Test.

   b. Partially open the printer cover, and actuate and deactuate the area #2 jam sensor.

   Test indication (PRP) changes when sensor is actuated and deactuated.
   Y   **N**
   | Replace the area #2 jam sensor. If the problem still exists, replace the main PWB.

4. Perform a copy operation. The printer motor runs at the beginning of the copy operation.
   Y   **N**
   | Replace the printer motor. If the problem still exists, replace the main PWB.

5. Check/replace the pressure roller driver belts/gears.

RAP 2.14 Area #3 Paper Jams

1. Perform the following:

   a. Remove the document and copy output trays.

   b. Open the printer, and remove the donor film cartridge.

   c. Check the paper path below the scanner for obstructions.

   Paper path is clear of obstructions.
   Y   **N**
   | Remove obstruction.

2. Inspect the paper output roller #1, paper output roller #2, and the idler rollers on the lower paper chute assembly. Rollers are clean, properly mounted, and are not worn.
   Y   **N**
   | Clean/replace roller(s).

3. Perform the following:

   a. Enter the service mode, and perform Test 16, Sensor Test.

   b. Partially open the printer cover, and actuate and deactuate the area #3 jam sensor.   (The sensor can be reached with a small screwdriver through the left side of the terminal.)

   Test indication (PJ2) changes when sensor is actuated and deactuated.
   Y   **N**
   | Replace the area #3 jam sensor. If the problem still exists, replace the main PWB.

4. Check/replace the paper output roller driver belts.

RAP 2.15 Improper Thermal Head Position

1. Perform the following:

   a. Enter the service mode, and perform Test 16, Sensor Test.

   b. Open the printer, and remove the donor film cartridge.

   c. Actuate and deactuate the thermal head position sensor.

   Test indication (THS) changes when sensor is actuated and deactuated.
   Y   **N**
   | Replace the thermal head position sensor. If the problem still exists, replace the main PWB.

2. Perform the following:

   a. Install the donor film cartridge, and close the printer.

   b. Remove the lower front cover (REP 4.1.4).

   c. Inspect the thermal head linkage and drive mechanism for worn or broken parts.

   Thermal head linkage cam shaft and driver mechanism components are good (Figure 1).
   Y   **N**
   | Repair/replace faulty component(s).

3. Replace the main PWB. If the problem still exists, replace the paper feed motor.

7033-101

Figure 1. Thermal head linkage cam shaft and drive mechanism components

RAP 2.16 Comm (EXXX) Error Code/Image Quality

1. Perform the following:

   a. Enter the service mode, and perform Test 08, Service Mode Diagnostics (automatic).

   b. Allow the test to complete at least one loop, then stop the test.

   The test completes without an error code.
   Y   N
   | Repair according to the fault code.

2. Note when the EXXX error code or unacceptable image quality is occurring, and go to the appropriate step listed below.
   NOTE: For comparison of image quality samples anytime during this procedure, go to section 3.

Problem occurs when:	Go to step:
Sending	3
Receiving	9

3. Send a three page test document to the unattended test center. Test completes successfully.
   Y   N
   | Replace in order:
   •   main PWB
   •   modem PWB
   •   G3 PWB
   •   coupler PWB (RX only)
   NOTE: One or a combination of these PWBs may be causing the problem. If the problem still exists, contact additional technical support.

4. Send a three page test document to another known good location. Test completes successfully.
   Y   N
   | Replace in order:
   •   main PWB
   •   modem PWB
   •   G3 PWB
   •   coupler PWB (RX only)
   NOTE: One or a combination of these PWBs may be causing the problem. If the problem still exists, contact additional technical support.

5. Send a three page test document to the location that caused the original customer problem. Test completes successfully.
   Y   N
   | Go to step 7.

6. Go to Final Actions.

7. Perform the test again at 4800 BPS. Test completes successfully.
   Y   N
   | Request remote operator call for service.

8. Go to Final Actions.

9. Ensure the terminal is in the Service Mode. Receive four or five test copies from the unattended test center. Test completes successfully.
   Y   N
   | Go to step 13.

10. Contact the location that caused the original problem. Ask them to send four or five test copies. Test completes successfully.
    Y   N
    | Request remote operator call for service.

RAP 2.16 Comm (EXXX) Error Code/Image Quality
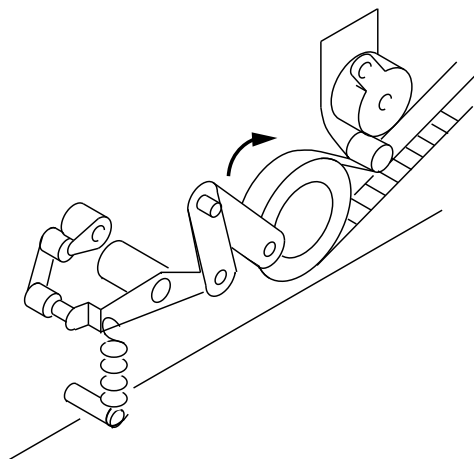
7033-101

Figure 1. Thermal head linkage cam shaft and drive mechanism components

1. Perform the following:

   a. Enter the service mode, and perform Test 08, Service Mode Diagnostics (automatic).

   b. Allow the test to complete at least one loop, then stop the test.

   The test completes without an error code.
   Y   N
   | Repair according to the fault code.

2. Note when the EXXX error code or unacceptable image quality is occurring, and go to the appropriate step listed below.
   NOTE: For comparison of image quality samples anytime during this procedure, go to section 3.

Problem occurs when:	Go to step:
Sending	3
Receiving	9

3. Send a three page test document to the unattended test center. Test completes successfully.
   Y   N
   | Replace in order:
   •   main PWB
   •   modem PWB
   •   G3 PWB
   •   coupler PWB (RX only)
   NOTE: One or a combination of these PWBs may be causing the problem. If the problem still exists, contact additional technical support.

4. Send a three page test document to another known good location. Test completes successfully.
   Y   N
   | Replace in order:
   •   main PWB
   •   modem PWB
   •   G3 PWB
   •   coupler PWB (RX only)
   NOTE: One or a combination of these PWBs may be causing the problem. If the problem still exists, contact additional technical support.

5. Send a three page test document to the location that caused the original customer problem. Test completes successfully.
   Y   N
   | Go to step 7.

6. Go to Final Actions.

7. Perform the test again at 4800 BPS. Test completes successfully.
   Y   N
   | Request remote operator call for service.

8. Go to Final Actions.

9. Ensure the terminal is in the Service Mode. Receive four or five test copies from the unattended test center. Test completes successfully.
   Y   N
   | Go to step 13.

10. Contact the location that caused the original problem. Ask them to send four or five test copies. Test completes successfully.
    Y   N
    | Request remote operator call for service.

11. Problem occurs ONLY when remote terminal initiates the telephone call.
    Y   N
    | Contact additional technical support.

12. Suspect remote telephone system or long distance vendor. Go to Final Actions.

13. Protocol Monitor printout is performed after the receive operation.
    Y   N
    | Rerun the test until an error code is displayed, then repair according to code.
           If problem cannot be duplicated, contact additional technical support.

14. Contact additional technical support for interpretation of printout.

RAP 2.17 Image Quality on Copy

1. Perform the following:

   a. Open the scanner, and clean the video assembly.

   b. Perform a copy operation using test pattern 82P151.

   c. Compare the quality of the copy to the original, and to the test pattern sample in Section 3.

   Copy quality is acceptable.
   Y   N
   | Go to step 3.

2. Perform the System Check.

3. Perform the following:

   a. Perform Test 01, Test Pattern Type A.

   b. Compare the quality of the test pattern to the sample in section 3.

   Print quality is acceptable.
   Y   N
   | Replace in order:
          • thermal head
          • RAM/ROM PWB
          • main PWB

4. Perform the following:

   a. Perform Test 03, Test Pattern Type C.

   b. Compare the quality of the test pattern to the sample in section 3.

   Print quality is acceptable.
   Y   N
   | Replace in order:
          • RAM/ROM PWB
          • main PWB

5. Replace the video assembly. If problem still exists, replace the main PWB.

RAP 2.18 Dial Tone is Not Heard

1. Display indicates:

   ```
   CALL UNSUCCESSFUL - WAITING FOR
   REDIAL
   TO CANCEL - SELECT PENDING JOB
   ```
   Y   N
   | Verify that the telephone line cord is connected to terminal and wall outlet. Replace in order:
          • G3 PWB
          • coupler PWB (RX only)

2. Perform the following:

   a. Disconnect the handset cord from the terminal.

   b. Disconnect the telephone line cord from the wall jack.

   c. Plug the handset cord into the wall jack.

   Dial tone is heard.
   Y   N
   | Inform customer of telephone line problem.

3. Reseat connectors, then replace in order:
   • telephone line cord
   • G3 PWB
   • coupler PWB (RX only)
   • telephone line filter PWB (RX only)
   If problem still exists, contact additional technical support.

11. Problem occurs ONLY when remote terminal initiates the telephone call.

   Y   N

   | Contact additional technical support.

12. Suspect remote telephone system or long distance vendor. Go to Final Actions.

13. Protocol Monitor printout is performed after the receive operation.

   Y   N

   | Rerun the test until an error code is displayed, then repair according to code.

           If problem cannot be duplicated, contact additional technical support.

14. Contact additional technical support for interpretation of printout.

RAP 2.17 Image Quality on Copy

1. Perform the following:

   a. Open the scanner, and clean the video assembly.

   b. Perform a copy operation using test pattern 82P151.

   c. Compare the quality of the copy to the original, and to the test pattern sample in Section 3.

Copy quality is acceptable.

   Y   N

   | Go to step 3.

2. Perform the System Check.

3. Perform the following:

   a. Perform Test 01, Test Pattern Type A.

   b. Compare the quality of the test pattern to the sample in section 3.

Print quality is acceptable.

   Y   N

   | Replace in order:
           ● thermal head
           ● RAM/ROM PWB
           ● main PWB

4. Perform the following:

   a. Perform Test 03, Test Pattern Type C.

   b. Compare the quality of the test pattern to the sample in section 3.

Print quality is acceptable.

   Y   N

   | Replace in order:
           ● RAM/ROM PWB
           ● main PWB

5. Replace the video assembly. If problem still exists, replace the main PWB.

RAP 2.18 Dial Tone is Not Heard

1. Display indicates:

```
CALL UNSUCCESSFUL - WAITING FOR REDIAL
TO CANCEL - SELECT PENDING JOB
```

   Y   N

   | Verify that the telephone line cord is connected to terminal and wall outlet. Replace in order:
           ● G3 PWB
           ● coupler PWB (RX only)

2. Perform the following:

   a. Disconnect the handset cord from the terminal.

   b. Disconnect the telephone line cord from the wall jack.

   c. Plug the handset cord into the wall jack.

Dial tone is heard.

   Y   N

   | Inform customer of telephone line problem.

3. Reseat connectors, then replace in order:
     ● telephone line cord
     ● G3 PWB
     ● coupler PWB (RX only)
     ● telephone line filter PWB (RX only)
If problem still exists, contact additional technical support.

RAP 2.19 Phone Does Not Ring or Terminal Does Not Answer

RX NOTE: Check that manual receive is not selected. Check that all auto-dialer and soft switch parameters are set correctly for your particular country.

1. The phone rings (but terminal does not answer).
   Y   N
   | Go to step 4.

2. Terminal is <u>not</u> set to manual receive.
   Y   N
   | Press *Poll/Man Rcv* to take terminal out of manual answer mode.

3. **USO:** On the G3 PWB, set J2/M2 jumper to the OFF position (ring sensitivity 10 VRMS). If the jumper is already OFF, replace the G3 PWB. If the problem still exists, replace the main PWB.

   RX: On the coupler PWB, set links J4 and J5 to the lowest ring sensitivity (refer to section 6.1.2). If the problem still exists, replace in order:
   • G3 PWB
   • coupler PWB
   • main PWB

4. Perform the following:

   a. Disconnect the handset cord from the terminal.

   b. Disconnect the telephone line cord from the wall jack.

   c. Plug the handset cord into the wall jack.

   Dial tone is heard.
   Y   N
   | Inform customer of telephone line problem.

5. Reseat connectors, then replace in order:
   • telephone line cord
   • G3 PWB
   • coupler PWB (RX only)
   • telephone line filter PWB (RX only)
   If problem still exists, contact additional technical support.

RAP 2.20 Sensor Test

1. Perform Service Mode Test 16, Sensor Test.

   a. Start the test.

   b. Press Select until the sensor/switch to be tested is shown on the display (refer to section 6.2.4 for listing).

   c. Manually actuate suspect sensor/switch.

   Test indication for suspect sensor/switch changes state (from H to L or from L to H).
   Y   N
   | Replace sensor/switch.

2. Exit the test.

   a. Press Stop.

   b. Return to the procedure which directed you to this RAP, or go to Final Actions.

RAP 2.21 Keypad Key Malfunction

1. Perform Service Mode Test 18, Touch Tone Test.

   a. Start the test.

   b. Press Select to cycle through all of the tones.

   All tones are generated.
   Y   **N**
   | Replace in order:
   | • main PWB
   | • RAM/ROM PWB
   | • G3 PWB

2. Replace the control panel.

RAP 2.22 No Tone When Stop Is Pressed

1. Press Clear. Tone is heard.
   Y   **N**
   | Go to step 3.

2. Replace control panel.

3. Perform the following:

   a. Open the flip panel.

   b. Press Sound Control, then press Select until PANEL TONE is flashing.

   c. Press Enter.

   ON is flashing.
   Y   **N**
   | Press Select until ON is flashing, then press Enter.

4. Replace speaker. If problem still exists, replace main PWB.

RAP 2.23 Improper or No Reduction When Receiving

1. Perform the following:

   a. Print a service mode options report to obtain the soft switch settings.

   b. Compare the current settings of soft switches 121, 122, and 127 with the defaults listed in Appendix A.

   Current settings match the defaults.
   Y   **N**
   | Contact additional technical support to determine the proper settings for the soft switches.

2. Perform the following:

   a. Enter the service mode, and perform Test 16, Sensor Test.

   b. Remove the paper tray.

   c. Manually actuate each position on the sensor and observe the change in the sensor status.

   All positions in the paper size sensor check good.
   Y   **N**
   | Replace the paper size sensor.

3. Replace the main PWB. If the problem still exists, contact additional technical support.

3. Print Quality

Section Contents

Introduction

The Image Quality (IQ) section is used to identify an image quality problem.

The Test Pattern Samples are reproductions of acceptable image quality of Diagnostic Test Patterns generated by the terminal and Test Pattern 82P151 copied on the terminal.

Use the Image Defect Samples as a comparison to identify any image quality defects which may have been produced during System Check.

3.1 Test Pattern Samples

3.1.1 Test Pattern Type A
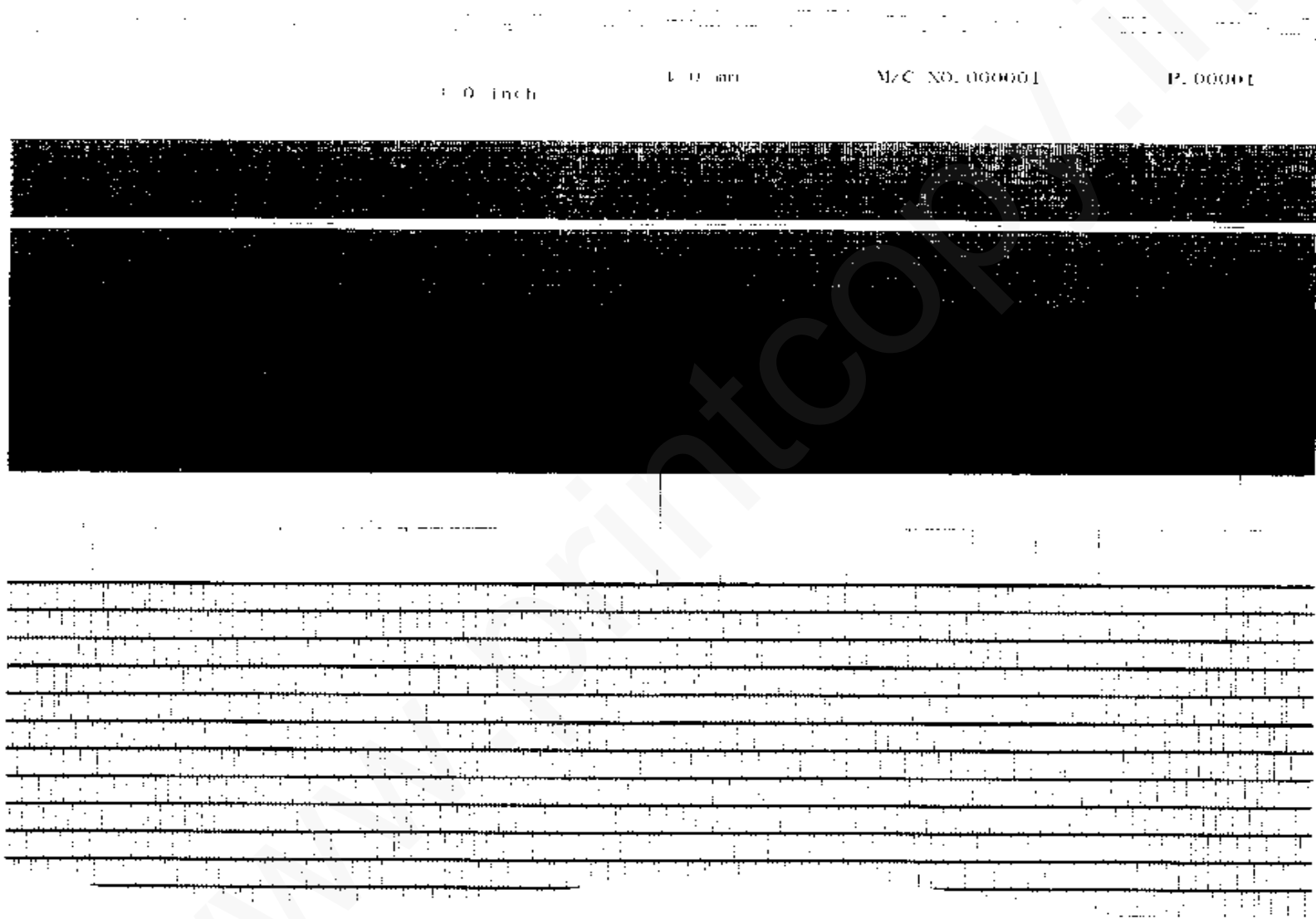
3.1.2 Test Pattern Type C

Telecopier 7032 / 7033 Service Manual
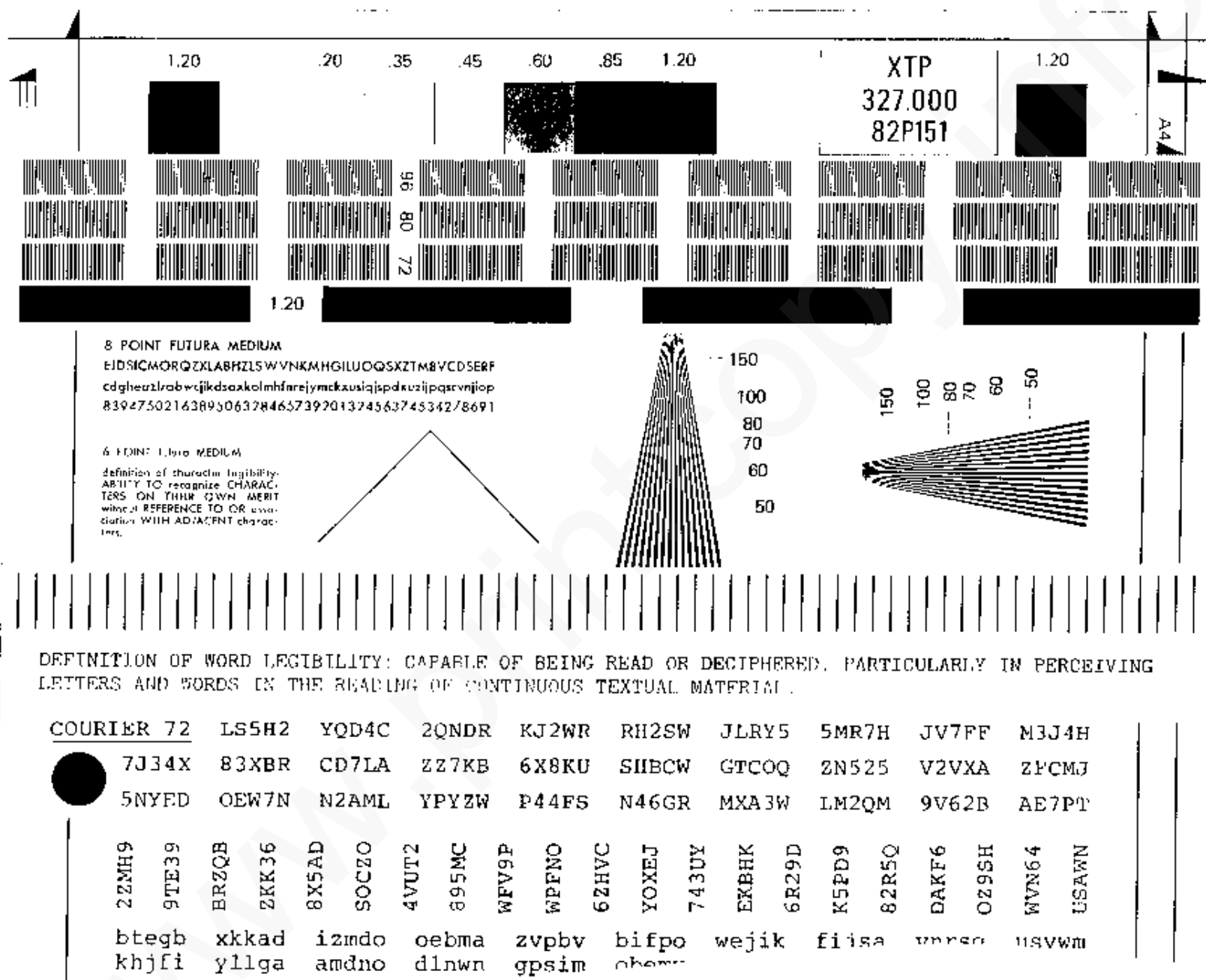
3.2 Image Defect Samples
3.2.1 Blurred Image

Possible causes: main PWB, video assembly
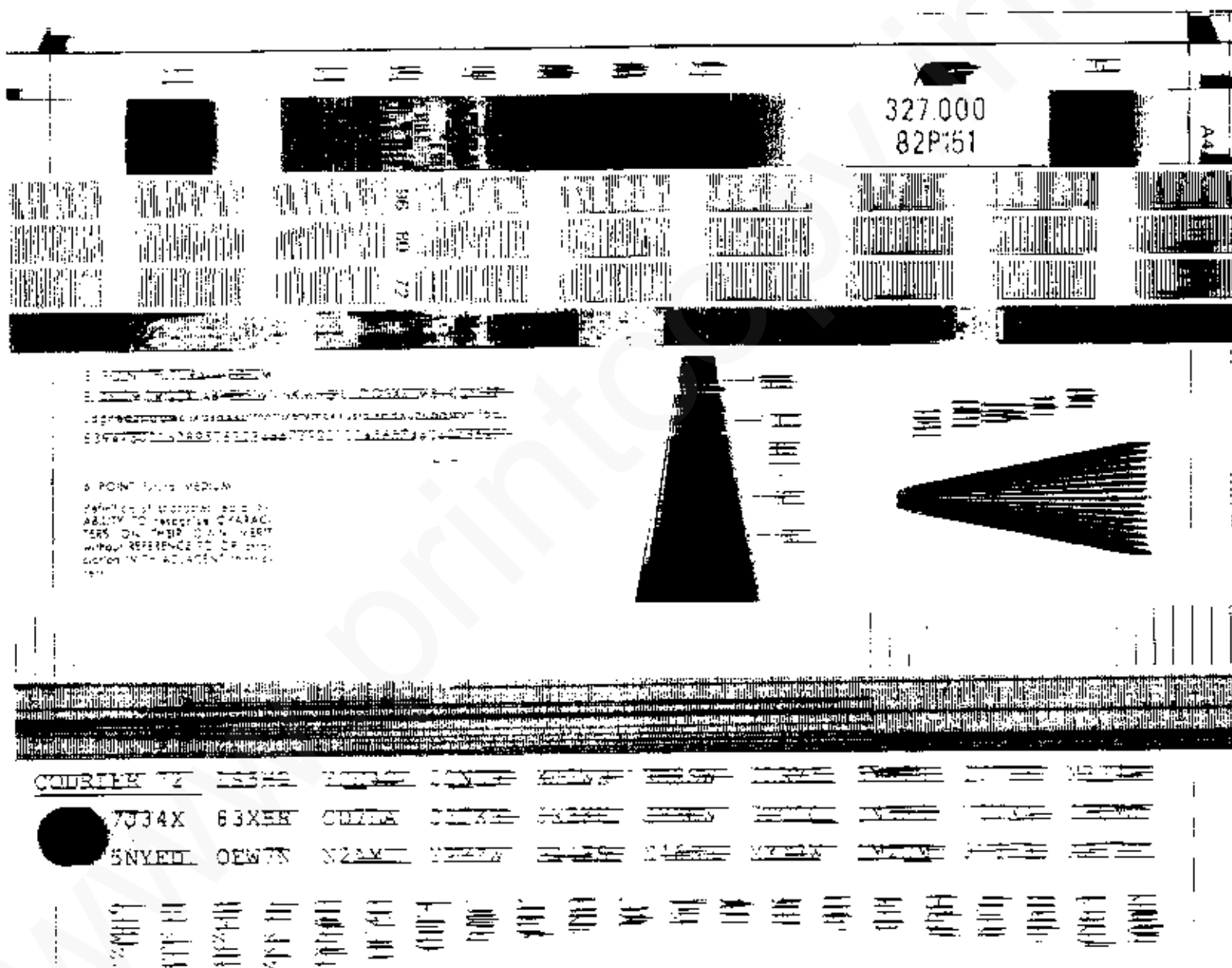
3.2.2 Obscured Image

Possible causes: main PWB, thermal head assembly
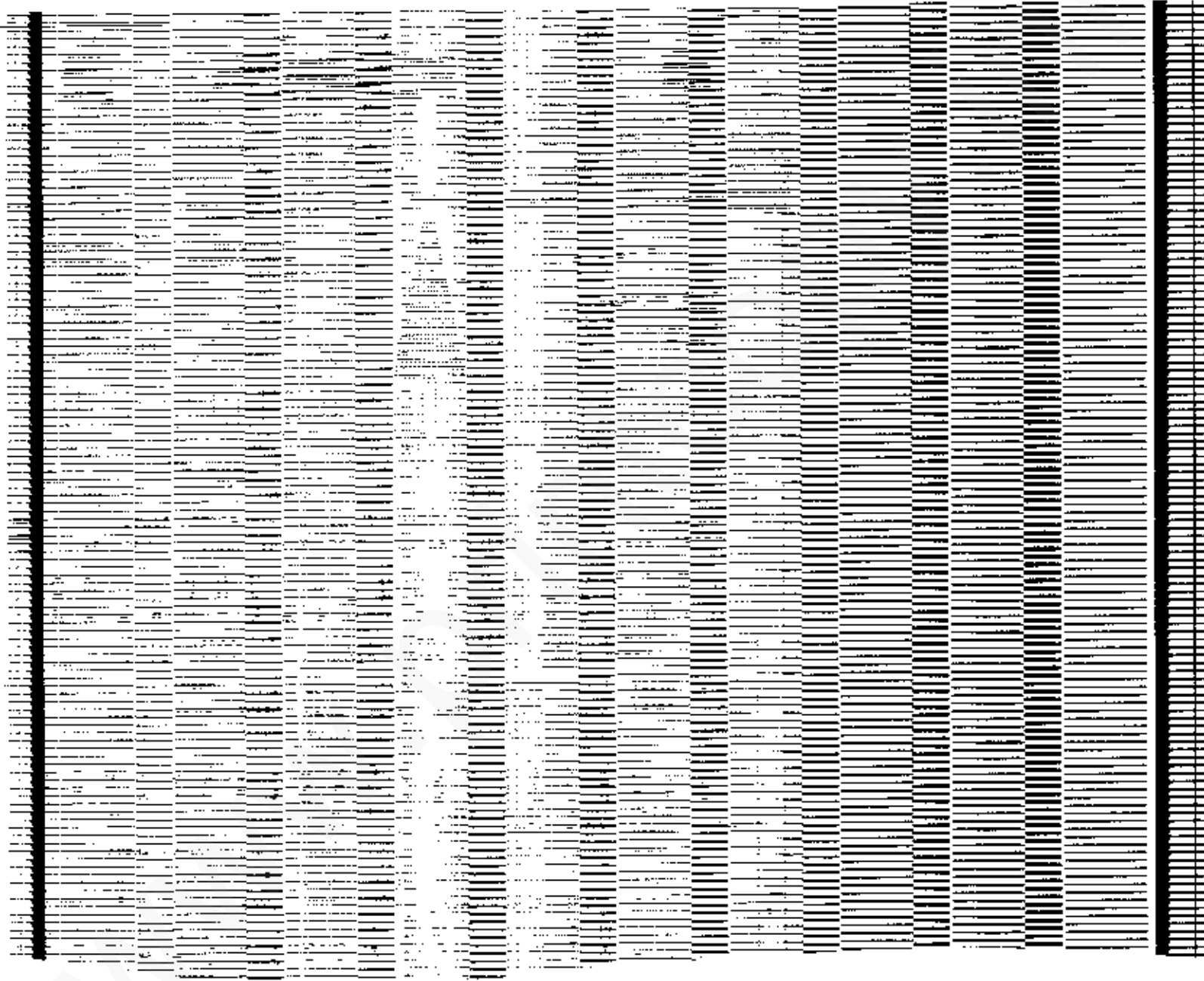
3.2.3 Light Image

Possible causes: main PWB, thermal head assembly
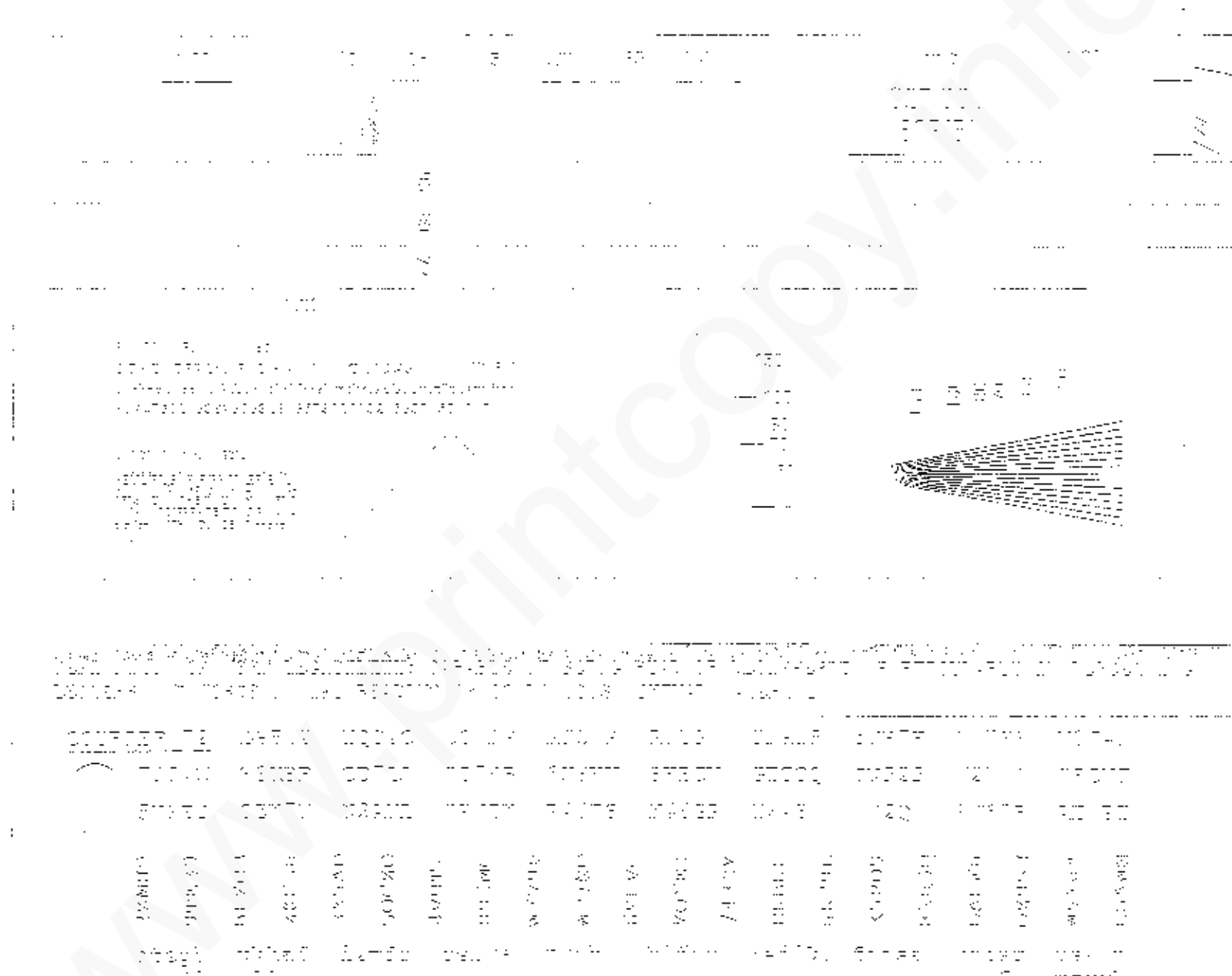
3.2.4 Delections
Possible causes: main PWB, thermal head assembly


```
XTP
327.000
82P151
```

EAD OR DECIPHERED, PARTICULARLY IN PERCEIVING
XTUAL MATERIAL.

RH2SW	JLRY5	5MR7H	JV7FF	M3J4H
SHBCW	GTCOQ	ZN525	V2VXA	ZFCMJ
N46GR	MXA3W	LM2QM	9V62B	AE7PT

YOXEJ 743UY EKBHK 6R29D K5PD9 82R5Q DAKF6 OZ9SH WVN64 USAWN

bifpo   wejik   fijsa   vnrsq   usywm
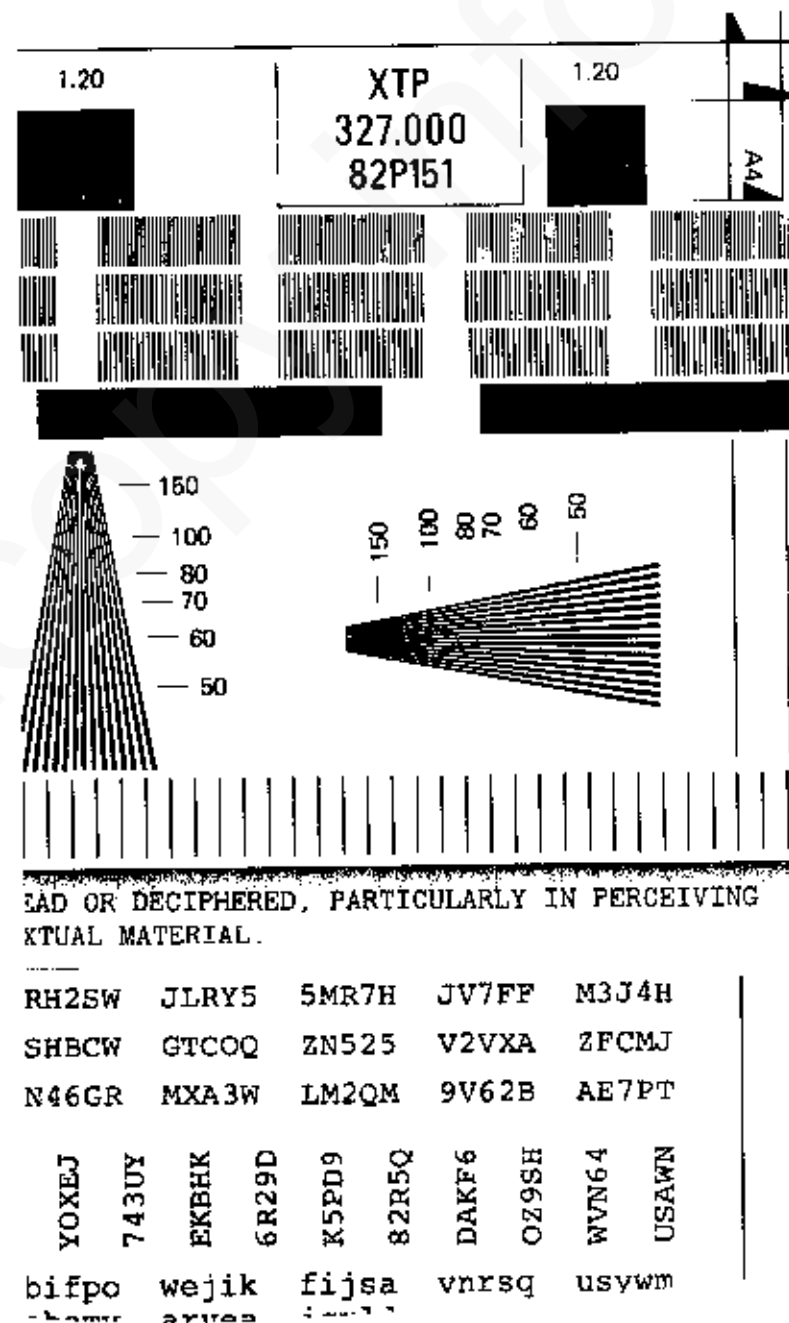
3.2.5 Ghost Image

Possible causes: main PWB, video assembly

3.2.6 Wrong Size Image

Possible causes: paper size sensor, main PWB

Telecopier Test Pattern

Using Xerox Telecopier f
action documents can b
grounds, the city, or the
telephone lines. Engi
change notices, and tabi
graphs, even photograph
printed, or illustrated . . . a
with 100% accuracy in fo
Xerox Telecopier transce

XEROX

F D H O M R T A L S D
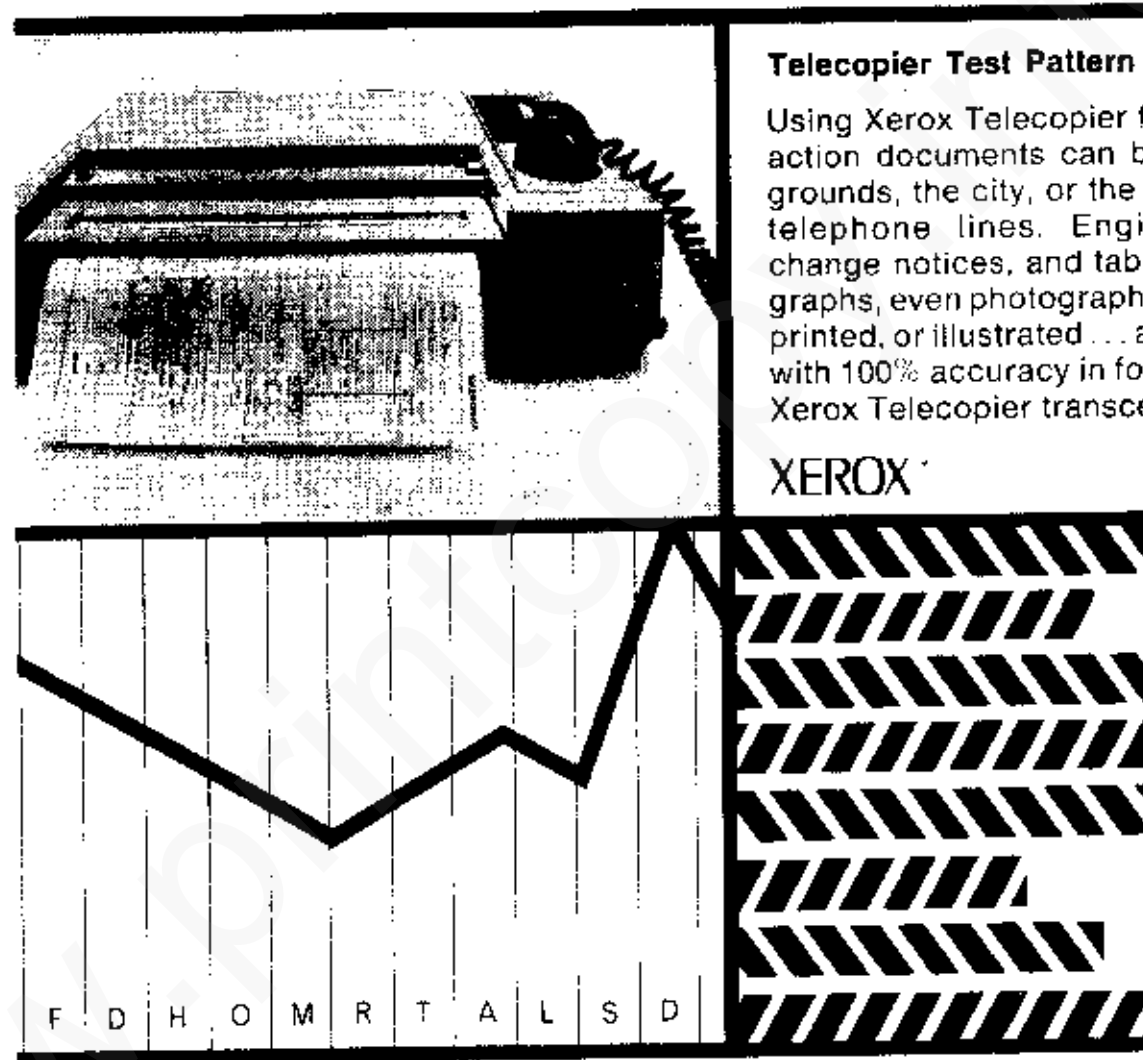
TELECOPIER CAN SPEED IMPORTANT GRAPHIC INFORMATION, SUCH AS
ENGINEERING CHANGE NOTICES AND GRAPHS

Remake

4. Repair / Adjustment

Section Contents

Section Contents (Cont'd)

Introduction

The removal and replacement procedures in this section are arranged by assembly. To remove a specific part, turn to the first page of the appropriate assembly and locate the part in the table. Follow the steps indicated in the table to remove that part. Removal and replacement procedures for most components and assemblies are included. Illustrations are also provided in order to assist you with the procedures.

If a component procedure cannot be found in this section, it usually means that removal or replacement procedures are obvious; the part or assembly is not spared and cannot be ordered; or the part does not need to be removed or replaced.

Removal - Contains step-by-step removal procedures for each specific component part of an assembly.

Replacement - Contains procedures to reinstall or replace the component parts of an assembly and those components or assemblies removed during the removal process.

4.1 Covers
Parts List on PL 5.1A and 5.10

Perform the indicated steps to remove a desired part.

Printer Cover Assembly	1			
Right Side Cover	2			
Left Side Cover	3			
Lower Front Cover	3	4		
Upper Front Cover	3	4	5	
Control Panel	6			
Rear Cover	3	6	7	
EMI Shield	3	6	7	8

Removal

1. Remove printer cover assembly. (PL 5.1A)

    a. Disconnect power cord.

    b. Lower the right side cover.

    c. Open printer top cover.

    d. Loosen four top cover screws.

    e. Partially close the upper printer, and remove the cover. The left end must be lifted up first, and then slide the cover away from upper printer hinge shaft.

2. Remove right side cover. (PL 5.1A)

    a. Disconnect power cord.

    b. Lower the right side cover.

    c. At the terminal frame, remove the screw securing the nylon restraint.

    d. <u>Single tray unit.</u> Slide door away from frame.

    e. <u>Double tray unit.</u> Slide auxiliary paper tray out approximately 4 to 6 inches.

    f. <u>Double tray unit.</u> Slide front end of door away from frame, then pull out back end of door from frame.

3. Remove left side cover. (PL 5.1A)

    a. Disconnect power cord.

    b. Remove document and copy output trays. (Turn document output tray retaining screw one-quarter turn, then pull tray straight out.)

    c. Remove three (3) screws securing left side cover.

    d. Slide out left side cover.

4. Remove lower front cover. (PL 5.1A)

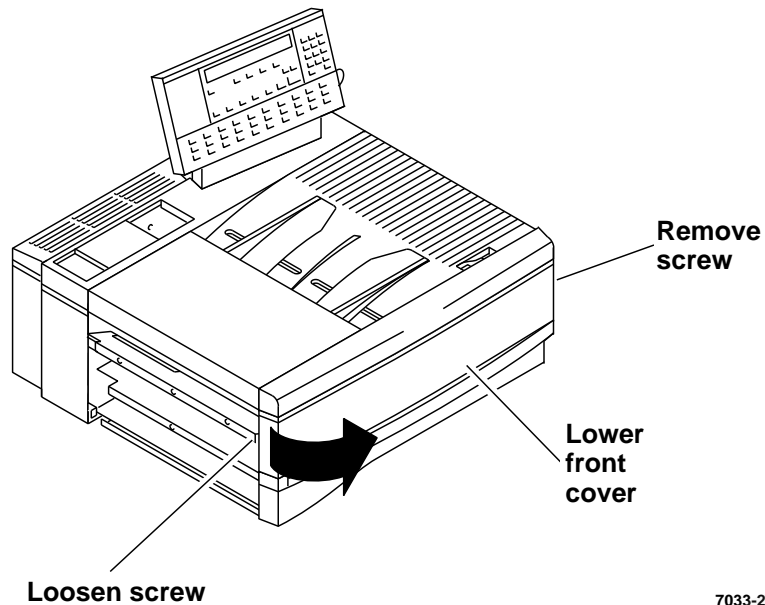   a. Remove the screw from the right end of the cover (Figure 1).

Remove screw

Lower front cover

Loosen screw

7033-225

Figure 1. Lower front cover removal

    b. Loosen the screw on the left end of the cover.

    c. Slide cover to the right, and remove.

5. Remove upper front cover. (PL 5.1A)

    a. Loosen two screws securing front top cover.

    b. Lift up cover.

6. Remove control panel. (PL 5.1A)

    a. Disconnect power cord.

    b. Remove control panel bracket rear cover. (One recessed screw in center of cover.)

    c. Disconnect J190 on rear of control panel.

    d. Loosen three screws securing the control panel to the bracket (Figure 2).

    e. Lift off the control panel.

Loosen screws

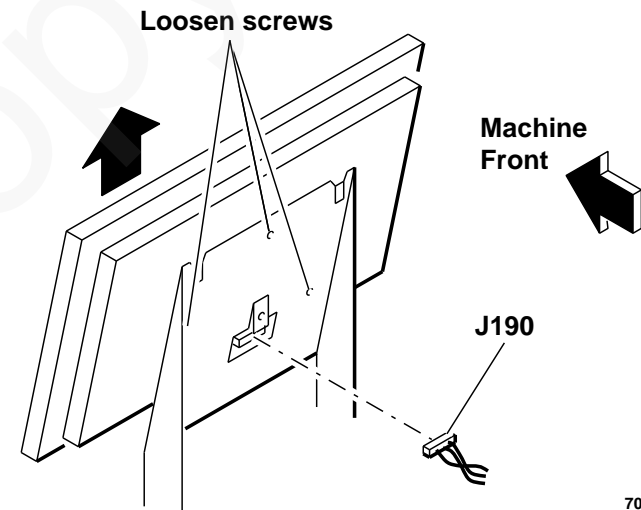**Machine Front**

J190

7033-226

Figure 2. Control panel removal

7. Remove rear cover. (PL 5.1A)

   a. Disconnect power cord, telephone line cord, and handset cord from rear of terminal, and remove handset from cradle.

   b. Remove PWB access cover.

      If installed, disconnect RS-232 and/or encryption interface cable(s).

      Remove one screw securing panel.
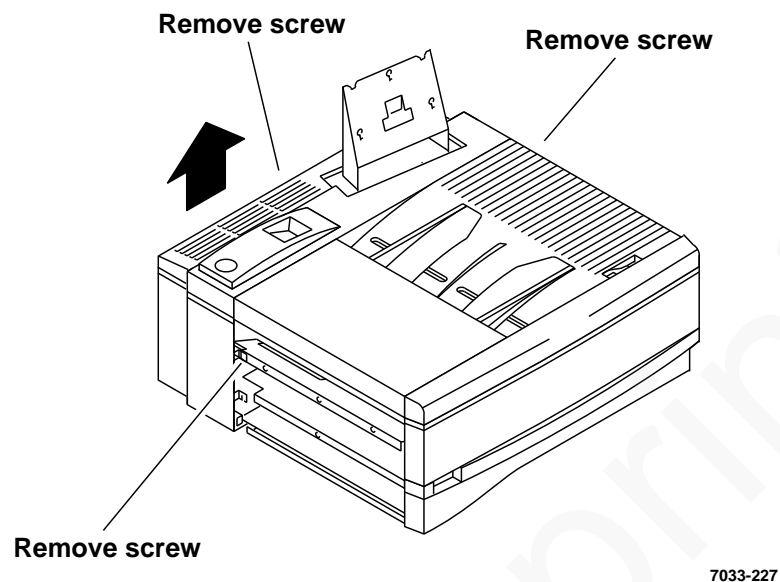
   c. Remove left rear cover screw (Figure 3).

Remove screw

Remove screw

Remove screw

7033-227

Figure 3. Rear cover removal

   d. Lower the right side cover, and remove right rear cover screw.

   e. Remove one screw (on rear of terminal) securing rear cover.

   f. While lifting rear cover up, pull bottom sides away from terminal.

8. Remove EMI shield. (PL 5.10)

   a. Loosen five screws (Figure 4).

CAUTION
Ensure that control panel harness does not snag when lifting off the EMI shield.

   b. Lift off EMI shield.

Loosen screws

Loosen screws

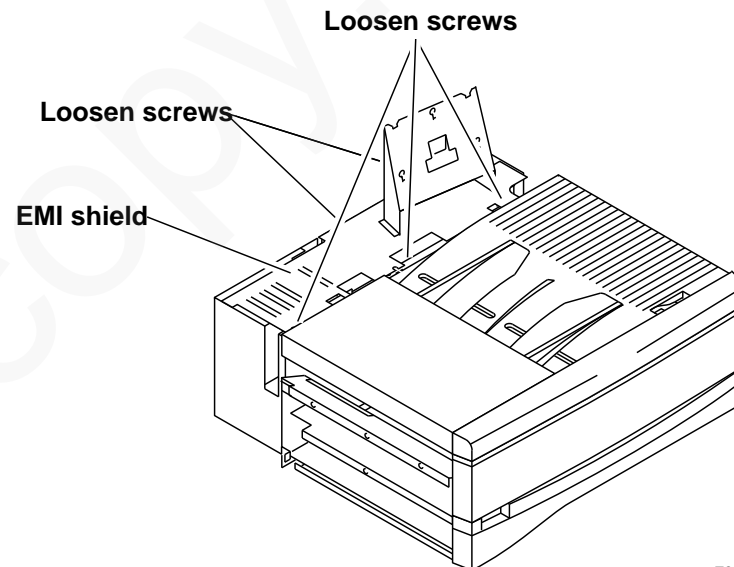**EMI shield**

7033-228

Figure 4. EMI shield removal

Replacement

CAUTION
Ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shield and electrical box.

1. Perform removal procedure in reverse order, ensuring slots on each side of the rear cover are matched with tabs .

4.2 ADF and Upper Scanner

Parts List on PL 5.2A and 5.2B

Perform the indicated steps to remove a desired part.

Upper Scanner Assembly	1	2	3	4	5	6
Platen Roller	7					
Input Idler Shaft	8					
Nudger Solenoid	1	4	5	6	7	9

Removal

1. Remove left side cover. (PL 5.1A)

   a. Disconnect power cord.

   b. Remove document and copy output trays.

   c. Remove three (3) screws securing left side cover.

   d. Slide out left side cover.

2. Remove lower front cover. (PL 5.1A)

   a. Remove the screw from the right end of the cover (Figure 1).

   b. Loosen the screw on the left end of the cover.

   c. Slide cover to the right, and remove.

3. Remove upper front cover. (PL 5.1A)

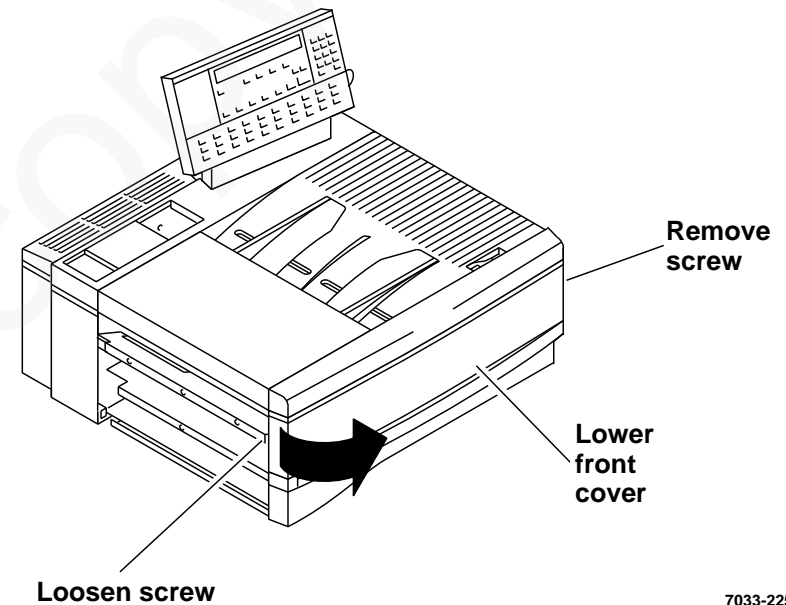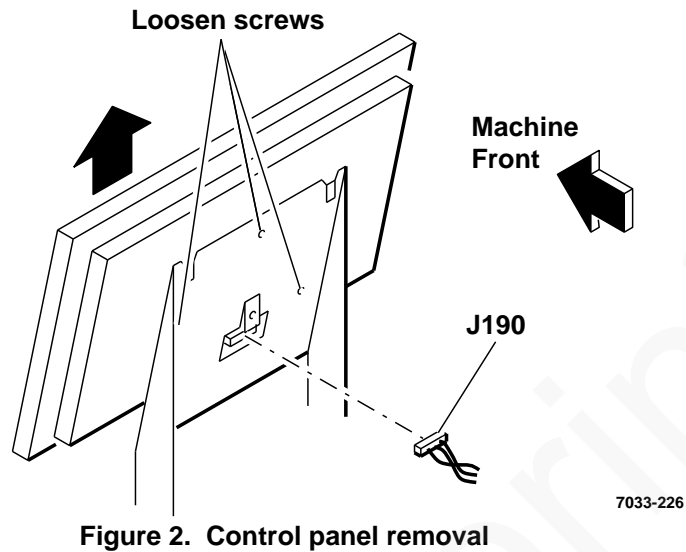   a. Loosen two screws securing front top cover.

   b. Lift up cover.

Remove screw

Lower front cover

Loosen screw
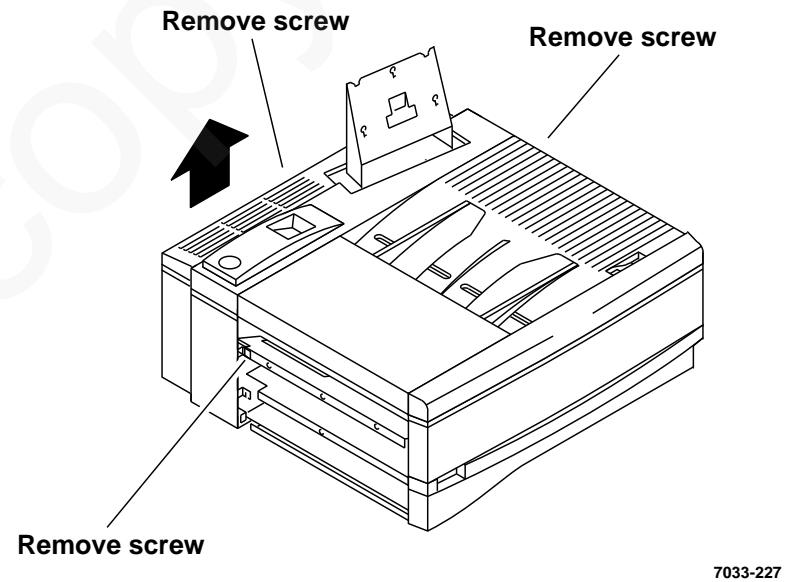
7033-225

Figure 1. Lower front cover removal

4. Remove control panel. (PL5.1A)

a. Disconnect power cord.

b. Remove control panel bracket rear cover. (One recessed screw in center of cover.)

c. Disconnect J190 on rear of control panel.

d. Loosen three screws securing the control panel to the bracket (Figure 2).

e. Lift off the control panel.

Figure 2. Control panel removal

5. Remove rear cover. (PL5.1A)

a. Disconnect power cord, telephone line cord, and handset cord from rear of terminal, and remove handset from cradle.

b. Remove PWB access cover.

If installed, disconnect RS-232 and/or encryption interface cable(s).

Remove one screw securing panel.

c. Remove left rear cover screw (Figure 3).

Figure 3. Rear cover removal

d. Lower the right side cover, and remove right rear cover screw.

e. Remove one screw (on rear of terminal) securing rear cover.

f. While lifting rear cover up, pull bottom sides away from terminal.

6. Remove upper scanner assembly. (PL 5.2A)

a. Disconnect nudger solenoid in-line connector P/J130.

b. Open upper scanner assembly.

c. Remove E-rings from front and rear ends of upper scanner assembly shaft (Figure 4).
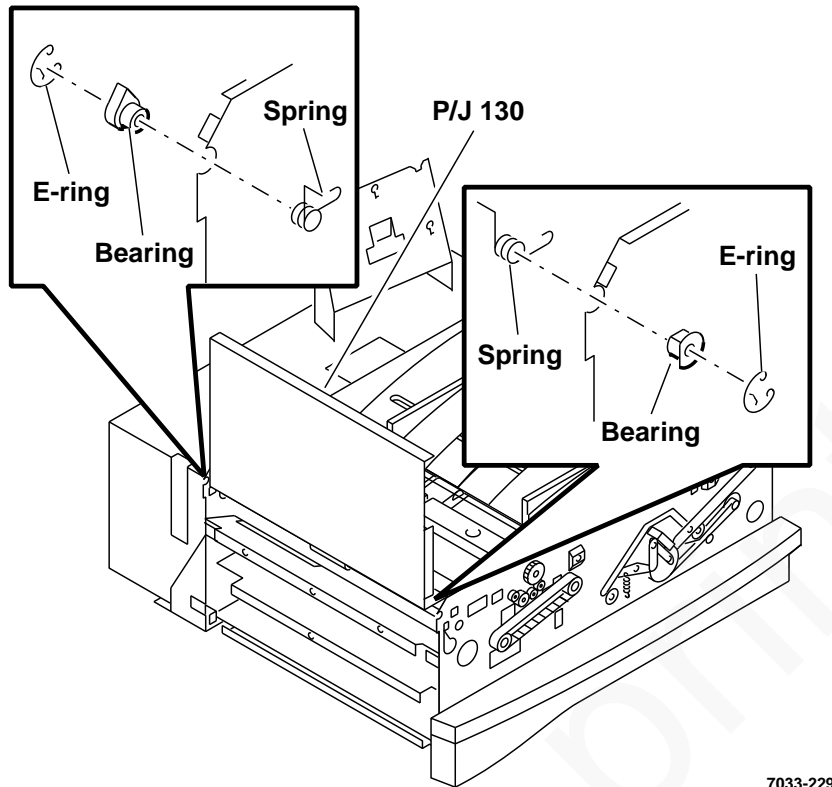
Figure 4. Upper scanner removal

7033-229

d. Slide front plastic bearing off of the front end of the shaft.

e. While holding upper scanner assembly, slide rear bearing off the rear end of the shaft.

f. Carefully remove upper scanner assembly from terminal.

g. Remove front and rear hinge springs from ends of shaft.

7. Remove platen roller. (PL 5.2B)

a. Disconnect power cord.

b. Open upper scanner assembly.

c. Remove input idler shaft belt (Figure 5).

7033-230

Figure 5. Platen roller removal

d. Remove E-ring, pulley, and bearing from front end of platen roller shaft (Figure 5).

e. Remove E-ring and bearing from rear end of platen roller shaft.

f. Remove platen roller.

8. Remove input idler shaft. (PL 5.2B)

a. Disconnect power cord.

b. Open upper scanner assembly.

c. Remove input idler shaft belt (Figure 6).
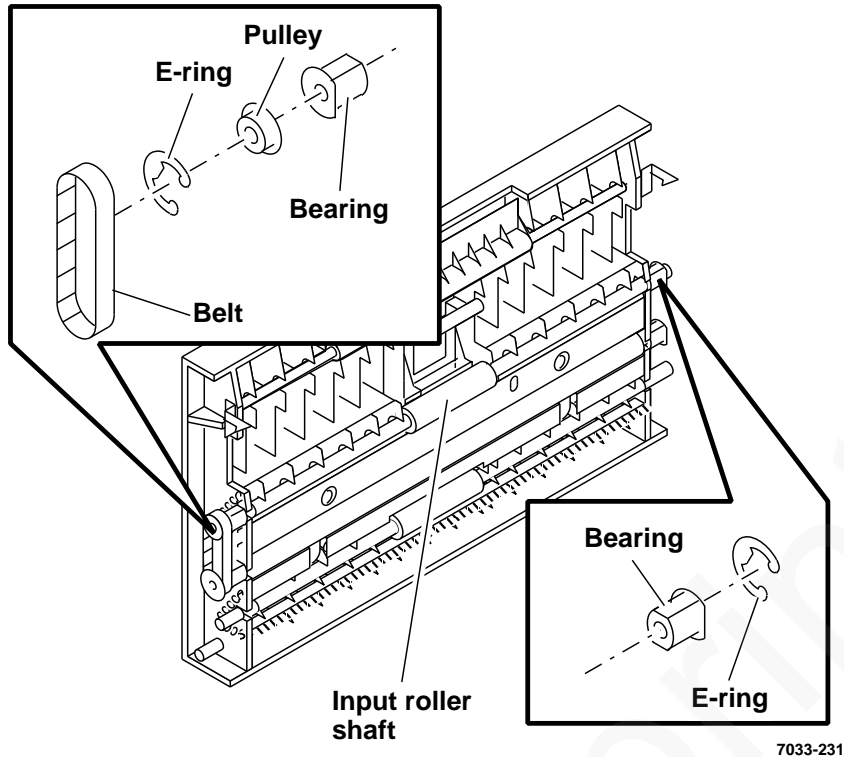
Figure 6. Input idler shaft removal

d. Remove E-ring, pulley, and bearing from front end of input idler roller shaft (Figure 6).
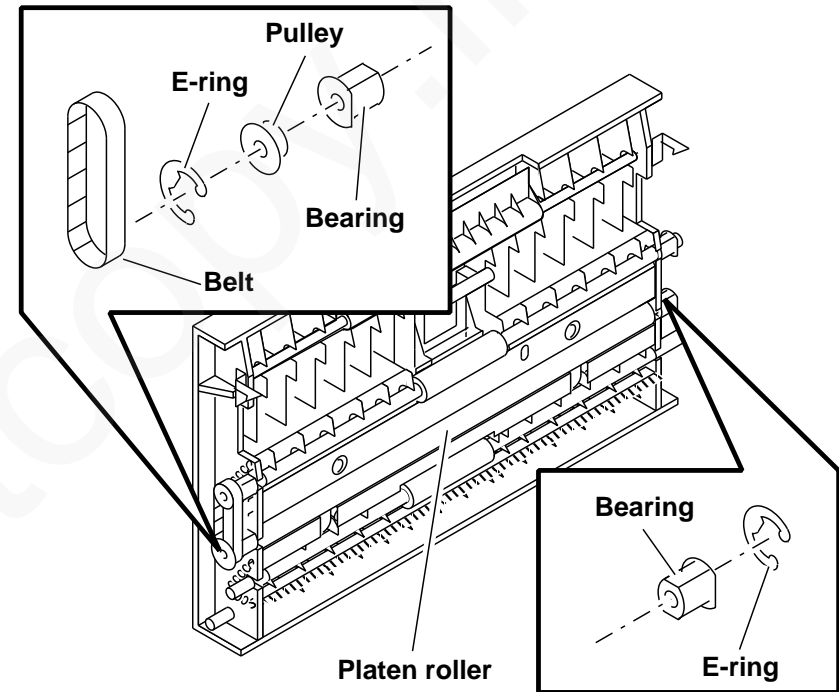
e. Remove E-ring and bearing from rear end of input idler shaft.

f. Remove input idler roller.

9. Remove nudger solenoid. (PL 5.2A)

a. Remove (4) screws from metal baffle and set aside.

b. Remove two screws securing hinge shaft to upper scanner assembly (Figure 7), then slide shaft out.
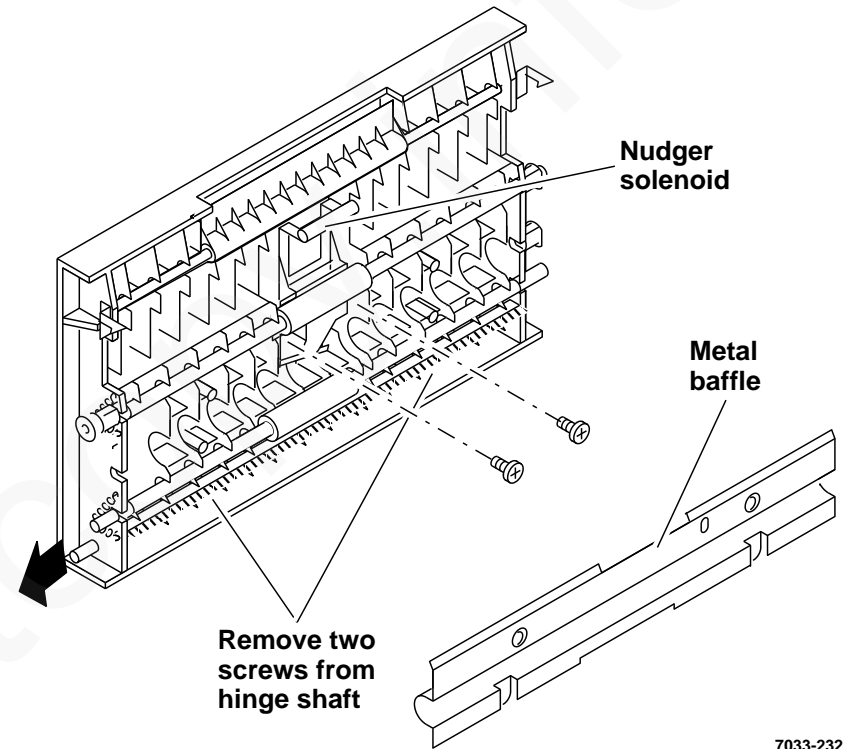
Figure 7. Nudger solenoid removal

NOTE: Before removing the nudger solenoid, note the routing of the harness. During replacement, the harness must be rerouted in the same manner to avoid obstructing the paper path.

c. Remove two securing screws from nudger solenoid, and remove assembly.

Replacement

1. Perform removal procedure in reverse order.

4.3 Lower Scanner Assembly

Parts List on PL 5.3, 5.4A, 5.4B, and 5.5

Perform the indicated steps to remove a desired part.

| Part														
Retard Guide Assembly	1	2	3	9										
ADF Gear	1	2	3	8										
ADF Belt	10													
ADF Belt Drive Shaft/Gears	1	2	3	8	11									
ADF Cartridge Bracket	1	2	3	8	11	12								
ADF Transfer Gears	1	2	3	13										
Input Drive Roller Front Gear/Bearing	1	2	3	9	14									
Input Drive Roller Rear Pulley/Belts/Bearing	1	4	5	6	15									
Input Drive Roller	1	2	3	4	5	6	8	9	14	15	16			
Output Drive Roller	1	4	5	17										
Scan Interlock Switch	1	4	5	18										
ADF Document Sensor/Scan Position Sensor	19													
Paper Chute Assembly, Upper	1	2	3	4	5	8	9	10	11	14	15	16	20	
Area #3 Jam Sensor	1	2	3	4	5	8	9	10	11	14	15	16	20	21
Paper Output Roller #1, Front Belt/Pulley/Bearing	1	2	3	22										
Paper Output Roller #1 Rear Belt/Pulley/Bearing	1	4	5	6	7	23								
Paper Output Roller #1	1	2	3	4	5	6	7	22	23	24				
Paper Output Roller #2 Pulley/Bearing	1	2	3	4	5	25								
Paper Output Roller #2	1	2	3	4	5	25	26							
Paper Chute Assembly, Lower	1	2	3	4	5	25	26	27						
Scan Motor	1	4	5	6	7	28								
Paper Size Sensor	1	4	5	6	7	29								
Video Assembly	1	4	5	30										

Removal

1. Remove left side cover. (PL 5.1A)

   a. Disconnect power cord.

   b. Remove document and copy output trays.

   c. Remove three (3) screws securing left side cover.

   d. Slide out left side cover.

2. Remove lower front cover. (PL 5.1A)

   a. Remove the screw from the right end of the cover (Figure 1).

Loosen screw

7033-225
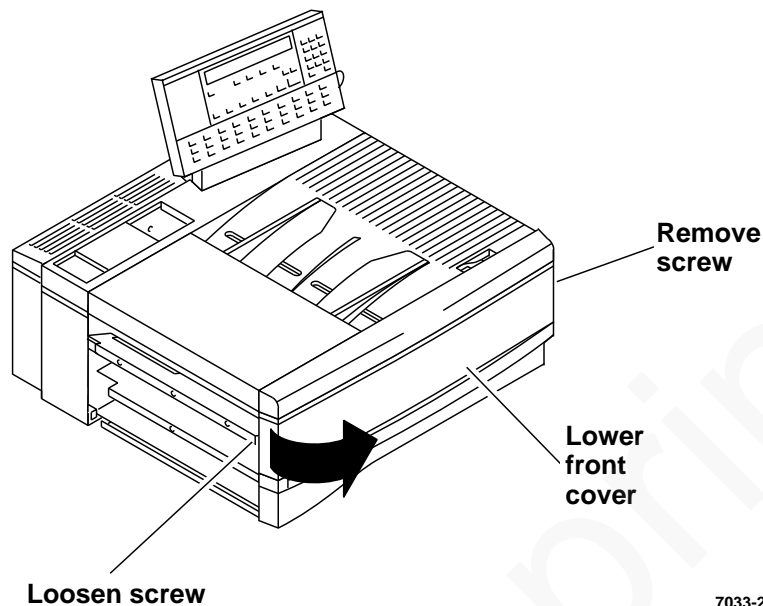
Figure 1. Lower front cover removal

   b. Loosen the screw on the left end of the cover.

   c. Slide cover to the right, and remove.

3. Remove upper front cover. (PL 5.1A)

   a. Loosen two screws securing front top cover.

   b. Lift up cover.

4. Remove control panel. (PL 5.1A)

   a. Disconnect power cord.

   b. Remove control panel bracket rear cover. (One recessed screw in center of cover.)

   c. Disconnect J190 on rear of control panel.

   d. Loosen three screws securing the control panel to the bracket (Figure 2).

   e. Lift off the control panel.

Loosen screws

Machine Front

J190

7033-226

Figure 2. Control panel removal

5. Remove rear cover. (PL 5.1A)

   a. Disconnect power cord, telephone line cord, and handset cord from rear of terminal, and remove handset from cradle.

   b. Remove PWB access cover.

      If installed, disconnect RS-232 and/or encryption interface cable(s).

      Remove one screw securing panel.

   c. Remove left rear cover screw (Figure 3).

Remove screw

Remove screw

Remove screw

7033-227

Figure 3. Rear cover removal

   d. Lower the right side cover, and remove right rear cover screw.

   e. Remove one screw (on rear of terminal) securing rear cover.

   f. While lifting rear cover up, pull bottom sides away from terminal.

6. Remove EMI shield. (PL 5.10)

   a. Loosen five screws (Figure 4).

   b. Lift off shield.

Loosen screws

Loosen screws

EMI shield

7033-228

Figure 4. EMI shield removal

CAUTION

During replacement, ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shield and electrical box.

7. Remove electrical box assembly. (PL 5.10)

a. Disconnect the following connectors from the main PWB:

- P101 • P105 • P107
- P108 • P109 • P111 (RX only)
- P400 • P600 • P104
- P102 • P110 • P106

b. Disconnect the speaker in-line connector (P/J191).

c. Remove the wire harnesses from the slot above the speaker.

d. Remove auxiliary tray connector bracket (Figure 4).

7033-277

Figure 4. Auxiliary tray bracket removal

e. Remove the five screws securing the ground straps to the electrical box.

f. Remove the screw securing the video harness ground clip to the electrical box.

g. Remove six screws securing electrical box assembly to terminal (two on each end and two on the inside bottom of the box).
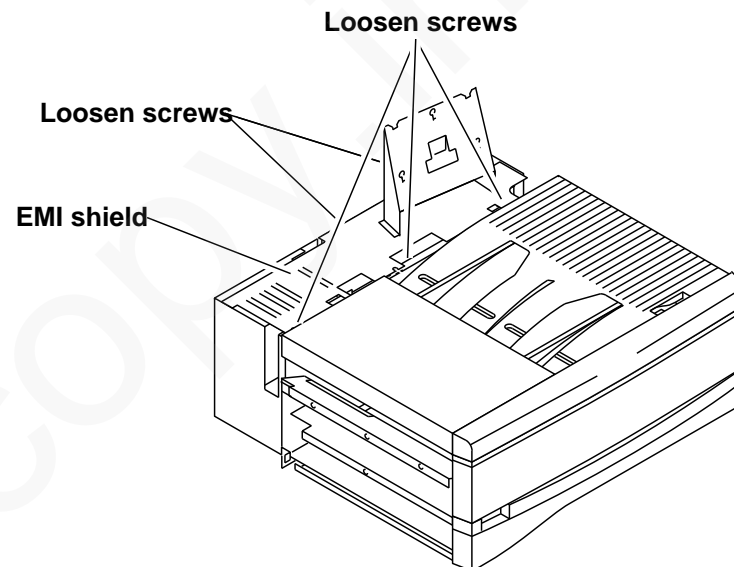
h. Lift the left end of the electrical box and pull the auxiliary tray harness out through the bottom slot of the box.

8. Remove ADF gear (30T). (PL 5.3)

a. Remove E-ring and gear from front of retard guide assembly shaft (Figure 6).

9. Remove retard guide assembly. (PL 5.3)

a. Open upper scanner assembly.

b. Remove E-ring from rear of retard guide assembly shaft (Figure 6).

7033-233
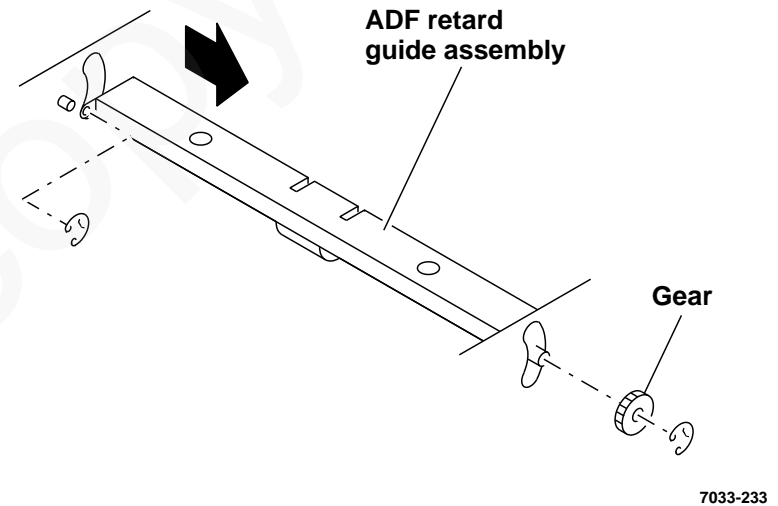
Figure 6. Retard guide assembly removal

c. Remove E-ring and gear from front of retard guide assembly shaft.

d. Slide assembly toward the front of the terminal until rear of assembly is removed from guide post (Figure 6), and then remove from terminal.

10. Remove ADF belt. (PL 5.3)

   a. Remove ADF belt cartridge from terminal. (Lift straight up and out.)

   b. Remove one of the E-rings from the middle shaft and hex idler roller (Figure 7), and slide the shaft out of the cartridge.
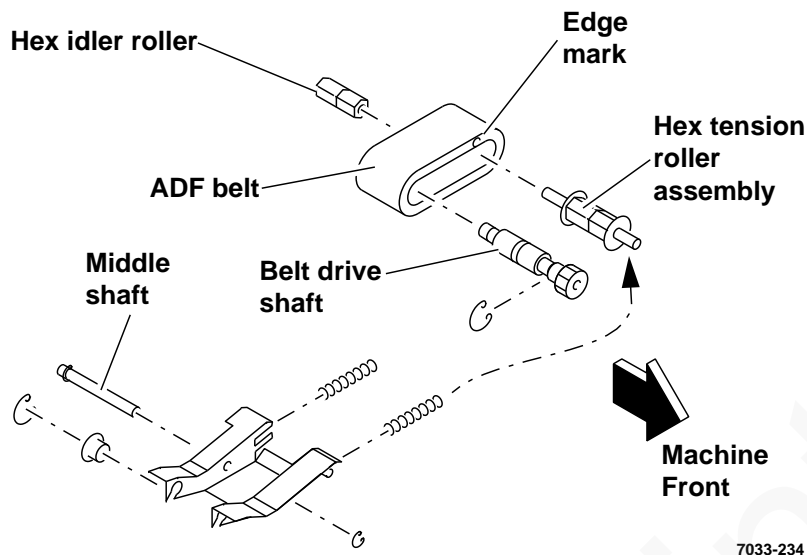
Figure 7. ADF belt removal

7033-234

   c. Remove the two E-rings (Figure 7) from the belt drive shaft.

   d. Slide the bearings on the belt drive shaft in an outward direction so the shaft can be pulled out of the slots in the housing.

NOTE: *Be careful when pulling the belt drive shaft away from the housing so as not to lose any parts. Two springs, a hex tension roller, and the shaft will come free as the belt drive shaft is removed.*

   e. Carefully pull the belt drive shaft out away from, and up over the top of, the housing (Figure 7).

   f. Slide the third shaft out the back of the housing to free the belt.

NOTE: *Install the new ADF belt with edge mark toward front of terminal.*

11. Remove ADF belt drive shaft/gears. (PL 5.4A)

   a. Remove ADF belt cartridge.

CAUTION
Care should be taken when removing or replacing lower document guide to avoid scratching the video assembly glass or damaging the sensors.

   b. Remove four securing screws, and remove lower document guide by sliding it to the left then lifting it out.

   c. Remove E-ring and gear from rear of shaft (Figure 8), and slide shaft out towards front of terminal (front gear/clutch and bearing should come out with shaft).

7033-235
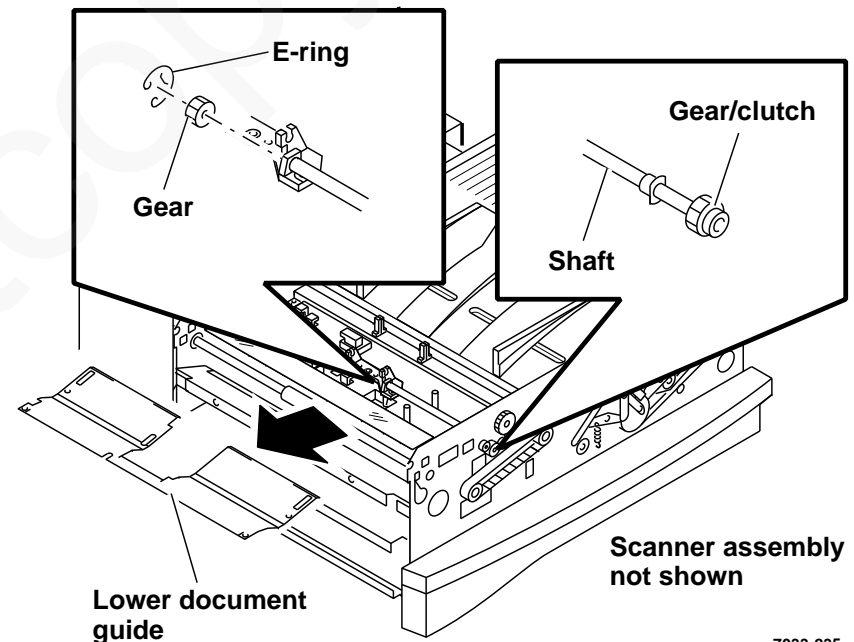
Figure 8. ADF belt drive shaft and gear removal

NOTE: *When replacing front gear/clutch, ensure it is positioned on shaft as illustrated.*

12. Remove ADF cartridge bracket. (PL 5.4A)

   a. Remove two securing screws (Figure 9), and remove bracket.

7033-236
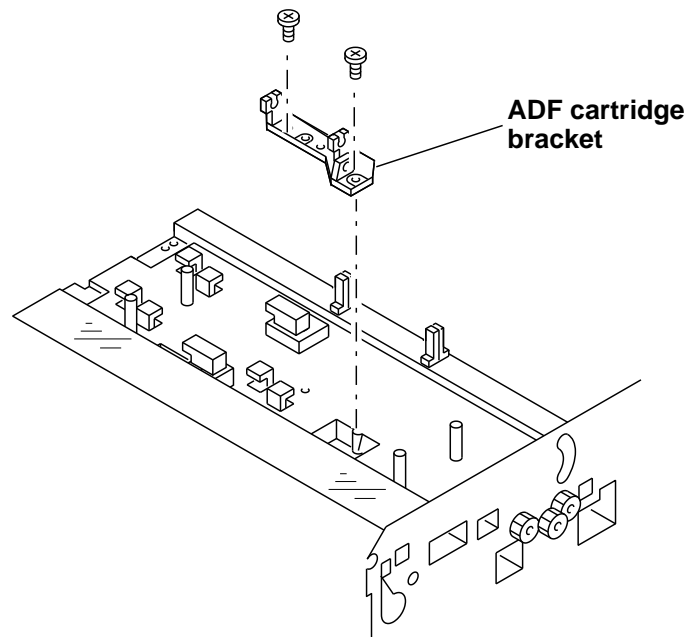
Figure 9. ADF cartridge bracket removal

13. Remove ADF transfer gears. (PL 5.4A)

   a. Remove E-ring(s).

   b. Remove transfer gear(s) (Figure 10).

7033-276
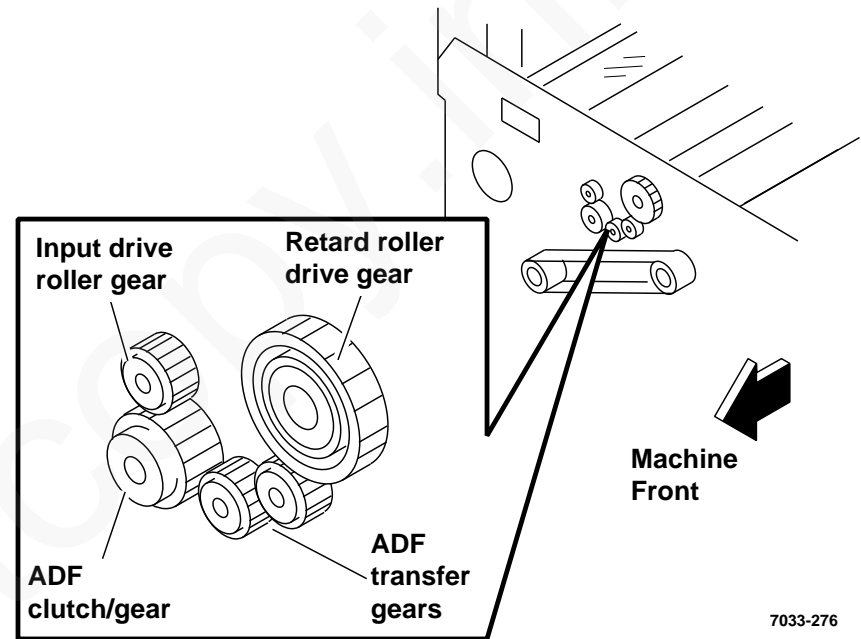
Figure 10. ADF transfer gears and retard roller drive gear

14. Remove input drive roller front gear/bearing. (PL 5.4B)

   a. Open upper scanner assembly.

   b. Remove E-ring from front end of input drive roller shaft.

   c. Slide gear (and bearing if desired) off of the shaft (Figure 10).

15. Remove input drive roller rear pulley, belts, and bearing. (PL 5.4B)

   a. Open upper scanner assembly.

   b. Remove six screws securing electrical box to frame and remove screws securing ground straps to left end of electrical box. Slide the left end far enough from the terminal to enable access to gears and belts at the left end.

   c. Remove the two belts from pulley (Figure 11).
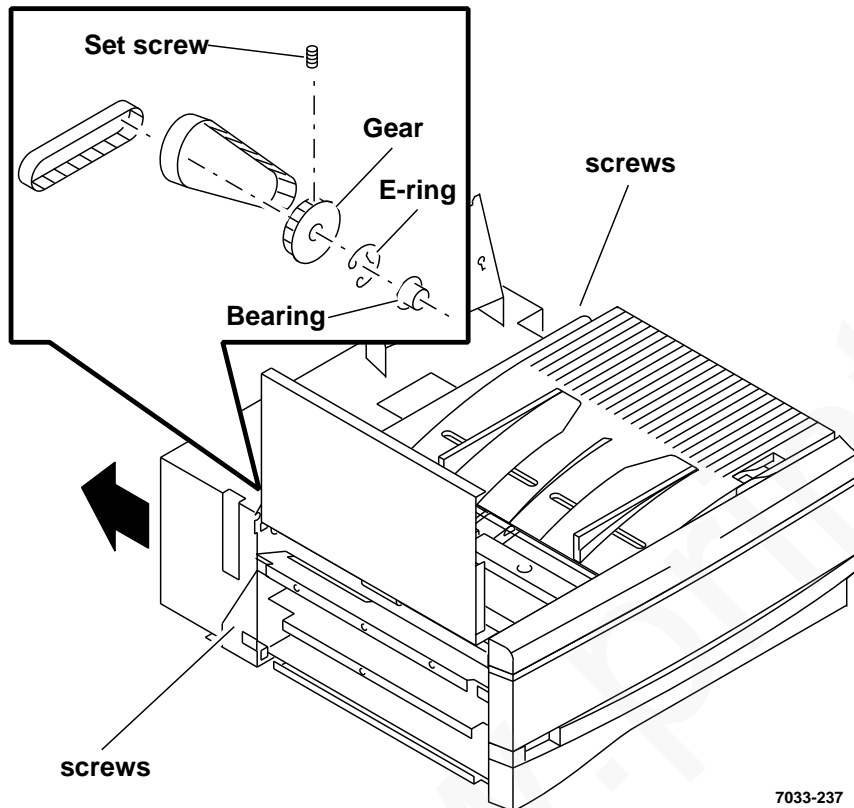
Figure 11. Input drive roller rear pulley, belts, and bearing removal

   d. Loosen set screw in input drive roller shaft pulley (Figure 11), and remove pulley.

   e. Remove bearing from end of shaft (Figure 11).

16. Remove input drive roller. (PL 5.4B)

   a. Remove ADF belt cartridge.

CAUTION

Care should be taken when removing or replacing lower document guide to avoid scratching the video glass or damaging the sensors.

   b. Remove four securing screws, and remove lower document guide by sliding it to the left then lifting it out of the terminal.

   c. Slide shaft toward the front until the rear of shaft is clear, then lift out.

17. Remove output drive roller. (PL 5.4B)

a. Open upper scanner assembly.

b. Remove six screws securing electrical box to frame and remove screws securing ground straps to left end of electrical box. Slide the left end far enough from the terminal to enable access to gears and belts at the left end.

c. Remove belt from pulley.

d. Loosen set screw in output drive roller pulley (Figure 12), and remove pulley.

Set screw

Pulley

Output drive roller
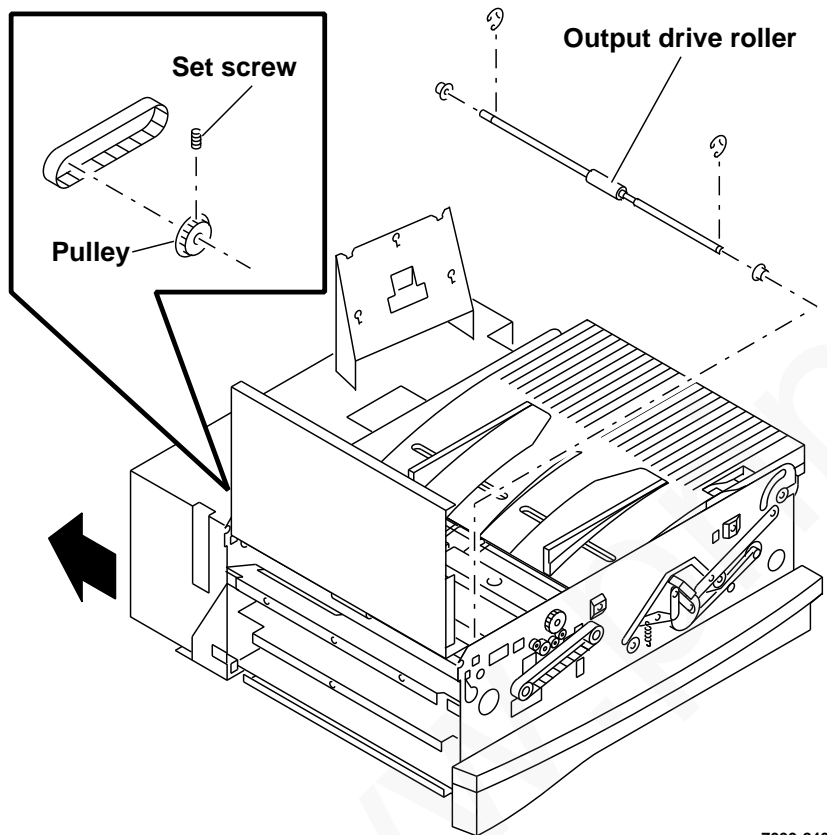
7033-240

Figure 12. Output drive roller removal

e. Remove front and rear E-rings and slide bearings inward.

f. Remove shaft toward the front until the rear of shaft is clear, then lift out.

18. Remove scan interlock switch. (PL 5.5)

a. Open upper scanner assembly.

b. Open printer cover.

c. Disconnect switch in-line connector, P/J140.

d. Remove four screws from lower document guide and slide to the left to access switch.

e. Remove screw securing switch to bracket, and remove switch.

19. Remove ADF document sensor/scan position sensor. (PL 5.4A)

a. Disconnect power cord.

b. Open upper scanner assembly.

CAUTION

Care should be taken when removing or replacing lower document guide to avoid scratching the video glass or damaging the sensors.

c. Remove four securing screws and remove lower document guide by sliding it to the left then lifting it out of the terminal.

d. Disconnect plug from sensor.

e. Using a small screwdriver, gently push on clip (Figure 13) to release sensor.

Clip
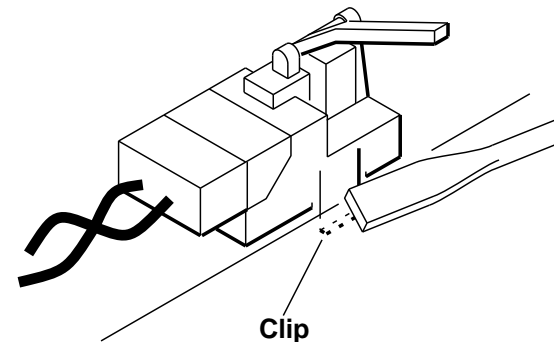
7033-241

Figure 13. Sensor removal

20. Remove upper paper chute assembly. (PL 5.4A)

   a. Disconnect plugs from ADF document and scan position sensors (P151 and P150).

   b. Remove four screws from paper chute assembly (Figure 14).

7033-242
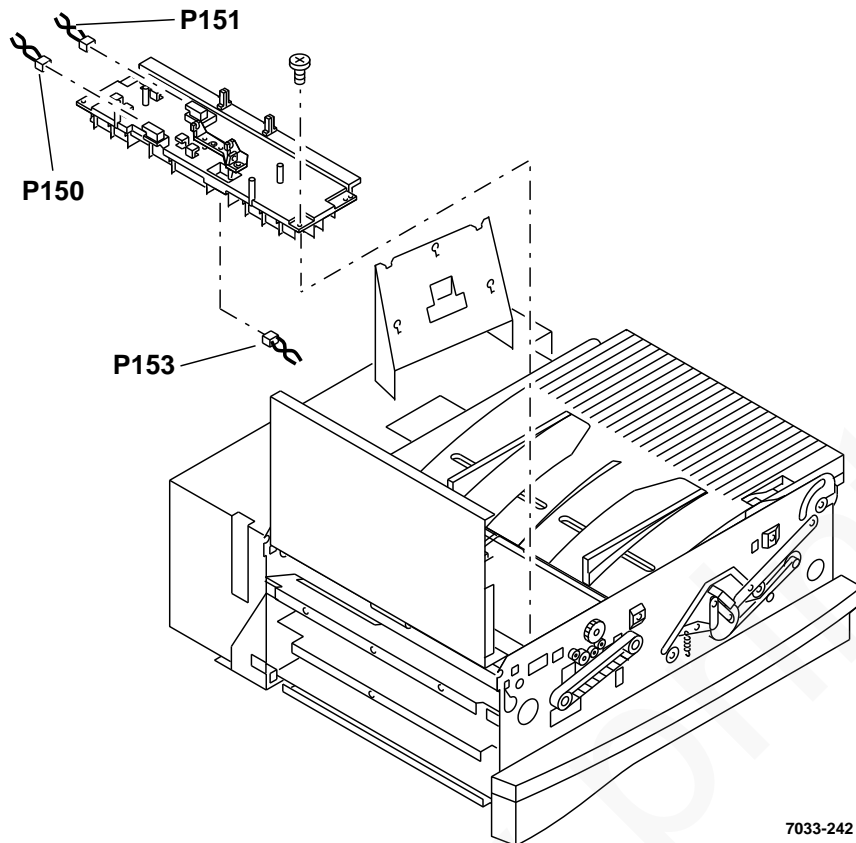
Figure 14. Upper paper chute assembly removal

   c. Carefully lift top chute assembly out of the terminal until the area #3 jam sensor assembly can be accessed, and disconnect P153 from sensor.

21. Remove area #3 jam sensor. (PL 5.4A)

   a. Using a small screwdriver, gently push on clip (Figure 15) to release sensor.
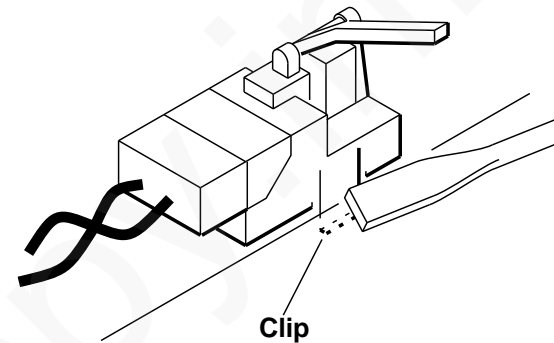
7033-241

Figure 15. Sensor removal

22. Remove paper output roller #1 front belt/pulley/bearing. (PL 5.5)

a. Open upper scanner assembly.

b. Remove belt from pulley.

c. Remove E-ring from front end of shaft.

d. Loosen set screw in pulley (Figure 16), and remove pulley.

7033-243
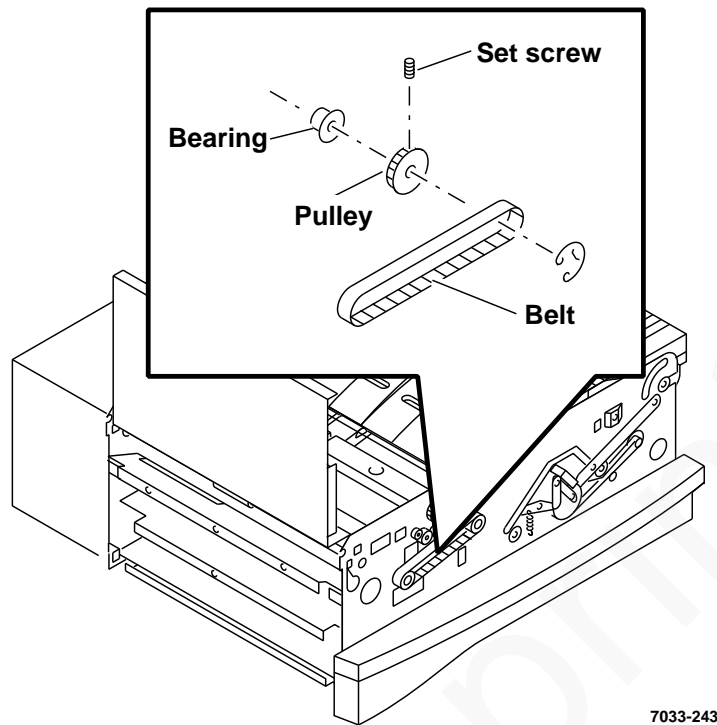
Figure 16. Front belt, pulley, and bearing removal

e. Remove pulley, and if necessary, remove the bearing by sliding off of shaft.

23. Remove paper output roller #1 rear belt/pulley/bearing. (PL 5.5)

a. Open upper scanner assembly.

b. Remove securing screw, and remove plastic wire guide (Figure 17).

7033-244
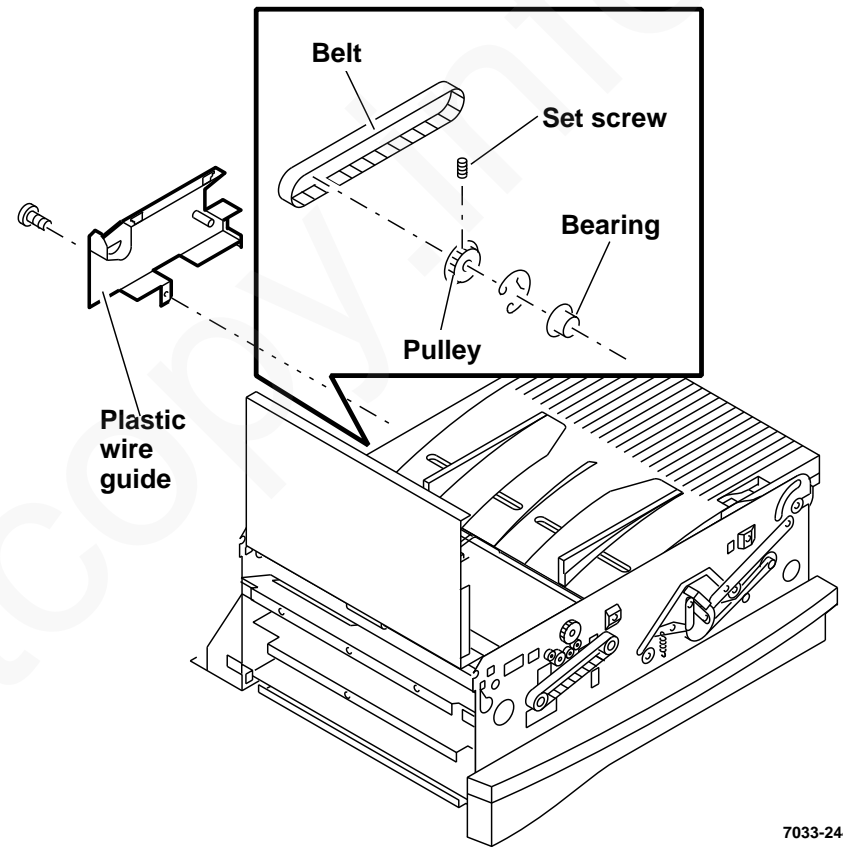
Figure 17. Rear belt, pulley, and bearing removal

c. Remove belt from pulley.

d. Remove outer E-ring from end of shaft.

e. Loosen set screw in pulley (Figure 17), and remove pulley.

f. Remove inner E-ring and bearing from end of shaft.

24. Remove paper output roller #1 from terminal. (PL 5.5)

25. Remove paper output roller #2 pulley/bearing. (PL 5.5)

   a. Open upper scanner assembly.

   b. Remove belt from pulley.

   c. Remove E-ring from front end of shaft.

   e. Loosen set screw in pulley (Figure 18), and remove pulley.

   f. Remove pulley, and if necessary, remove the bearing by sliding off of shaft.

b. Remove E-ring and bearing from rear end of shaft (Figure 19).

7033-246
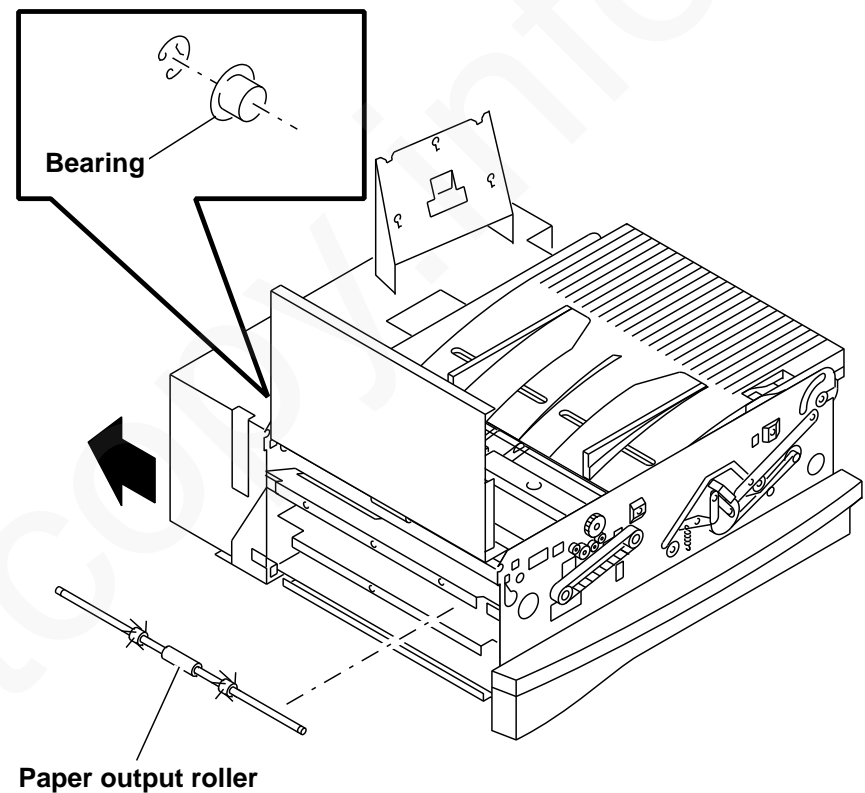
Figure 19. Paper output roller removal

   c. To remove shaft from terminal, push shaft forward from the rear until shaft end clears frame and remove.

7033-245

Figure 18. Pulley and bearing removal

26. Remove paper output roller #2. (PL 5.5)

   a. Remove six securing screws from electrical box assembly, and slide the left end far enough from the terminal to enable access to gears and belts at the left end.

27.   Remove lower paper chute assembly. (PL 5.5)

a.   Remove paper guide spring from inside front of terminal (Figure 20).
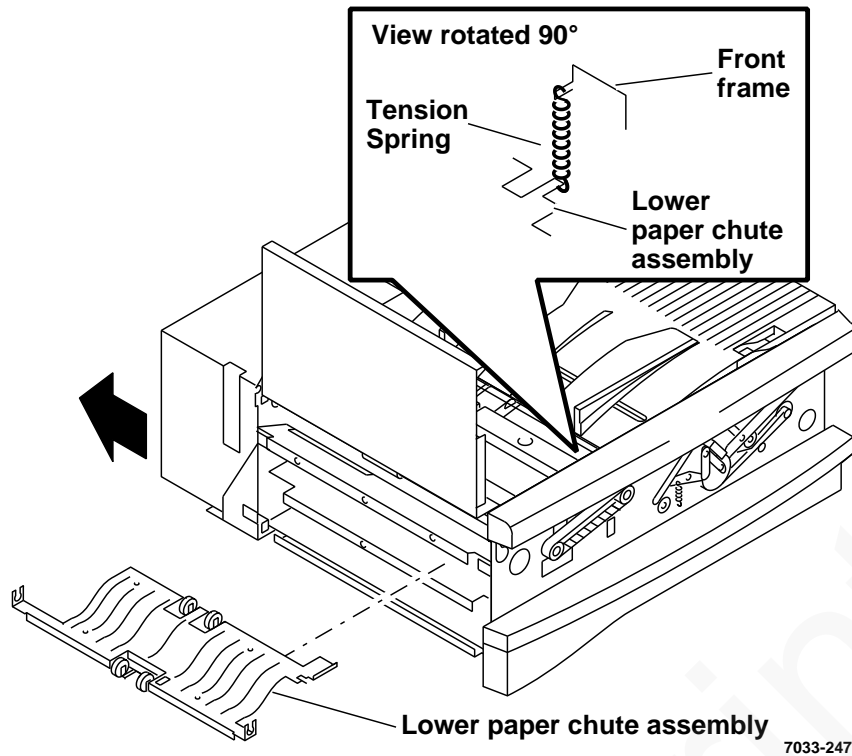
Figure 20. Lower paper chute assembly removal

b.   Slide chute assembly to the left in order to clear the paper output roller.

c.   Lift chute up and out of terminal.

CAUTION

Avoid contact with the printer jam sensor actuator during replacement of chute, ensuring lower paper chute assembly is positioned properly in bearings.

28.   Remove scan motor. (PL 5.4B)

a.   Remove plastic wire guide.

b.   Disconnect the scan motor's in-line connector P/J120, and release harness from plastic wire guide.

c.   Remove the paper tray.

d.   Loosen two motor mounting screws on rear frame (Figure 21).
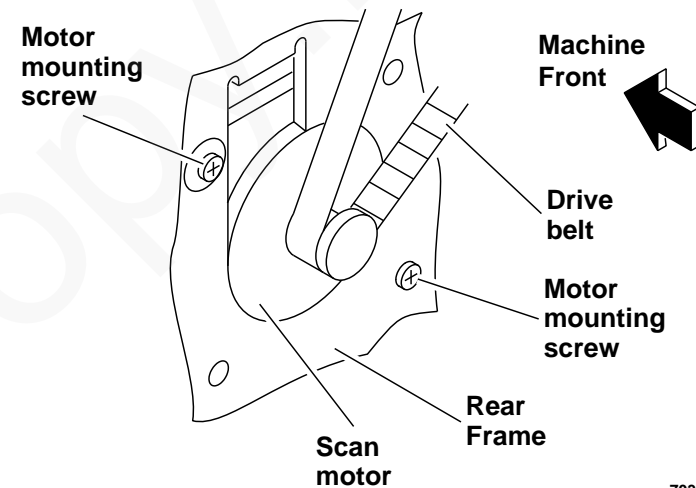
Figure 21. Scan motor removal

e.   Release drive belt from pulley.

WARNING
Metal edges are sharp in the paper tray compartment.

f.   Reach into paper tray compartment and hold motor while removing the mounting screws with your fingers.

g.   Carefully slide motor out through paper tray compartment.

29. Remove paper size sensor. (PL 5.1B)

    a. Remove two paper size sensor securing screws from rear of terminal (Figure 22).
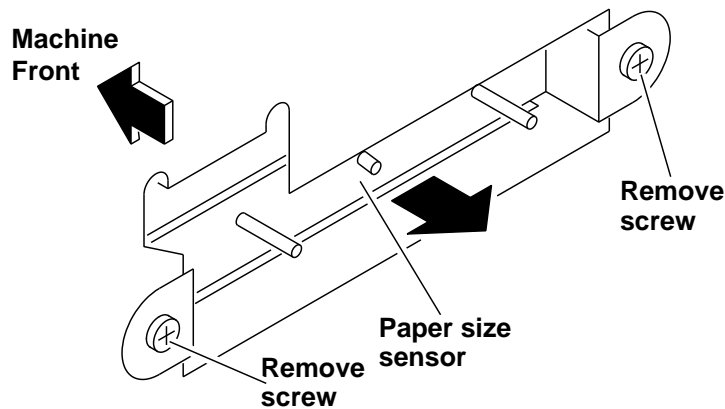
7033-249

Figure 22. Paper size sensor removal

    b. Pull paper size sensor bracket out far enough to access connector, and disconnect plug from connector.

    c. Remove sensor.

30. Remove video assembly. (PL 5.4A)

    a. Open upper scanner assembly.

    b. Remove four securing screws, and remove lower document guide by sliding it to the left then lifting it out of the terminal.

CAUTION

To avoid damage, make sure the sensor actuators under the lower document guide slide out of the slots when moving the guide.

    c. Loosen rear video assembly screw, and remove front screw (Figure 23).

    d. Remove the scan position sensor from its bracket to avoid damage when lifting the video assembly.
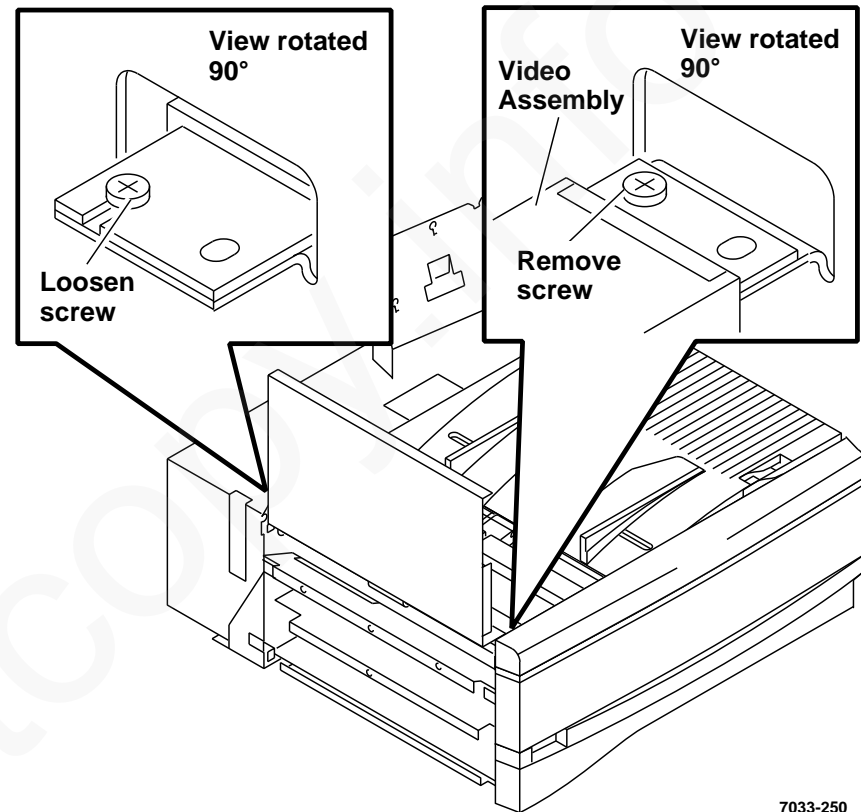
7033-250

Figure 23. Video Assembly removal

    e. Release the video harness from the restraints on the upper paper chute assembly.

    f. Lift video assembly out of the terminal far enough to access P/J197 on video assembly, and disconnect the plug from the video assembly.

    g. Remove video assembly from terminal.

Replacement

CAUTION

Ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shield and electrical box.

1. Perform removal procedure in reverse order.

4.4 Upper Printer Assembly
Parts List on PL 5.6a and 5.6B

Perform the indicated steps to remove a desired part.

Stop shaft	1	2	3	4	6	7	8			
Primary pulley	1	2	3	4	9					
Frame assembly	1	2	3	4	5	6	7	8	9	10
Secondary pulley	1	2	3	4	6	7	9	11		
Pressure roller, pulley, and gear	1	12								
Pressure roller idler shaft	1	13								
Release latches	1	14								

Removal

1. Remove printer cover assembly. (PL 5.1A)

   a. Disconnect power cord.

   b. Lower the right side cover.

   c. Open printer cover.

   d. Loosen four printer cover screws.

   e. Partially close the upper printer, and remove the cover. The left end must be lifted up first, and then slide the cover away from upper printer hinge shaft.

2. Remove left side cover. (PL 5.1A)

   a. Remove document and copy output trays.

   b. Remove three (3) screws securing left side cover.

   c. Slide out left side cover.

3. Remove control panel. (PL 5.1A)

   a. Disconnect power cord.

   b. Remove control panel bracket rear cover. One screw is recessed in center of cover.

   c. Disconnect J190 on rear of control panel.

   d. Loosen three screws securing control panel to bracket (Figure 1).

   e. Lift off the control panel.
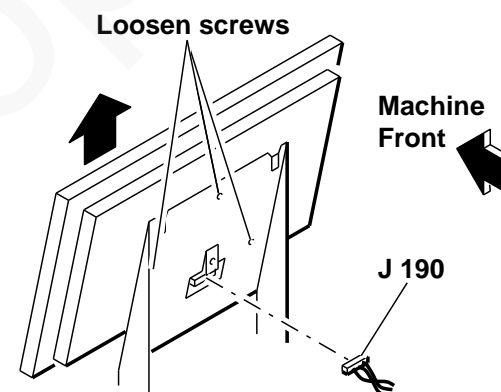
Figure 1. Control panel removal

4. Remove rear cover. (PL 5.1A)

   a. Disconnect power cord, telephone line cord, and handset cord from rear of terminal, and remove handset from cradle.

   b. Remove PWB access cover.

      If installed, disconnect RS-232 and/or encryption interface cable(s).

      Remove one screw securing panel.

c.   Remove left rear cover screw (Figure 2).

d.   Lower the right side cover, and remove right rear cover screw.

e.   Remove one screw (on rear of terminal) securing rear cover.

f.   While lifting rear cover up, pull bottom sides away from terminal.
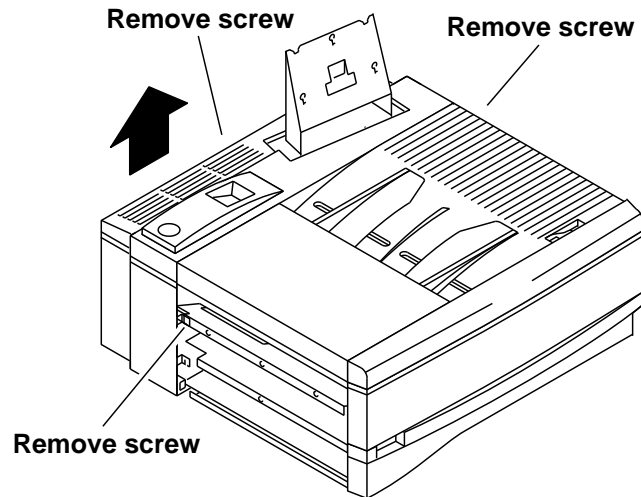
Figure 2. Rear cover removal

5.   Remove EMI shield. (PL 5.10)

a.   Loosen five screws (Figure 3).

b.   Lift off shield.

CAUTION

During replacement, ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shield and electrical box.

6.   Remove lower front cover. (PL 5.1A)

a.   Lower the right side cover.

b.   Remove the screw from the right end of the cover (Figure 4).

c.   Loosen the screw on the left end of the cover.

d.   Slide cover to the right, and remove.2

7.   Remove upper front cover. (PL 5.1A)

a.   Loosen two screws securing front top cover.
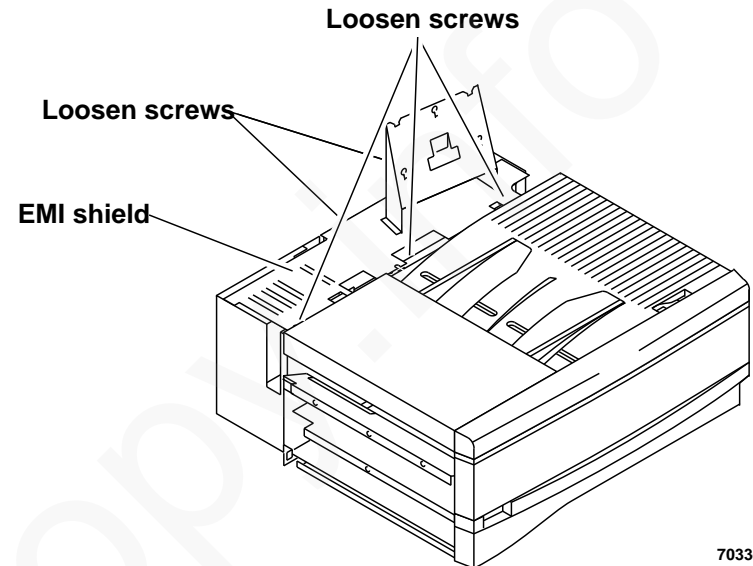
Figure 3. EMI shield removal
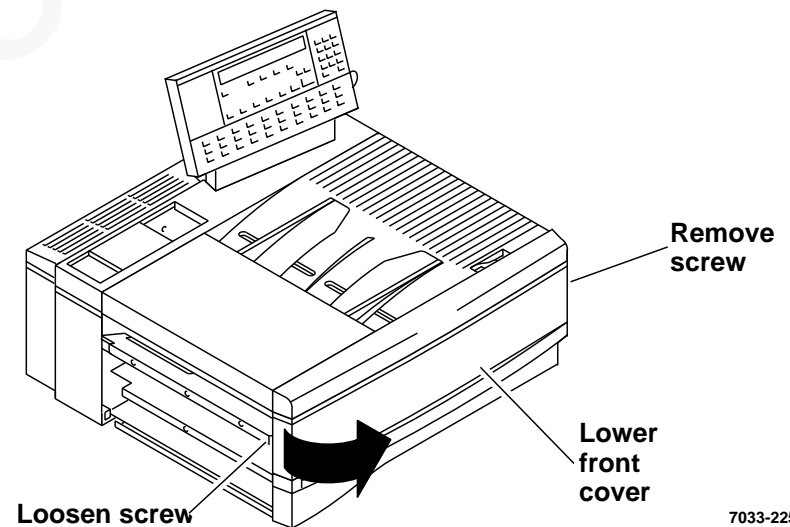
Figure 4. Lower front cover removal

b.   Lift up cover.

8. Remove stop shaft. (PL 5.6A)

a. Remove E-ring from front of stop shaft, and remove linkage arm (Figure 5).
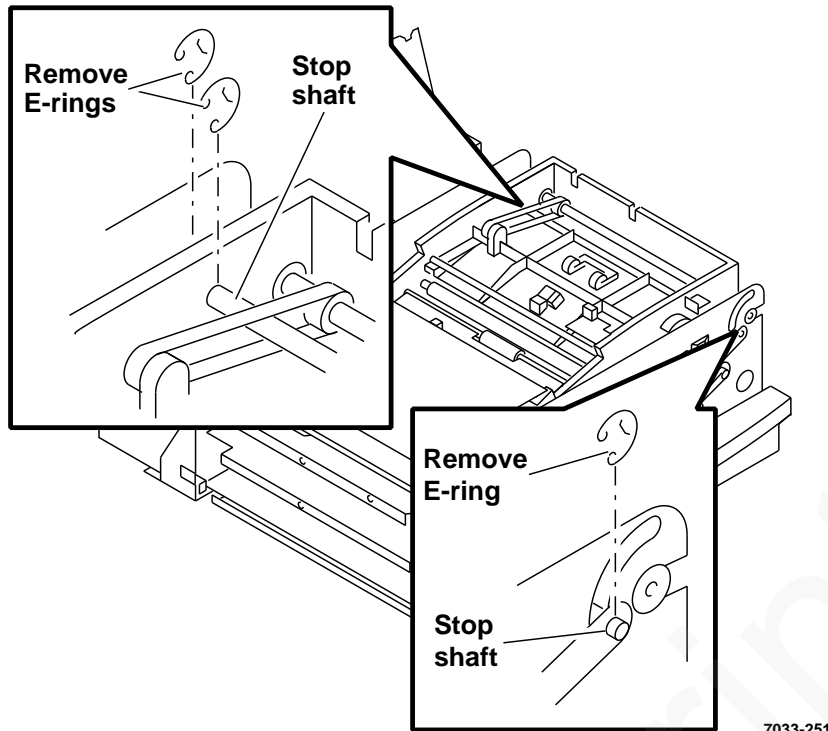
Figure 5. Stop shaft removal

b. Remove E-ring from rear inside end of stop shaft (Figure 5).

c. Remove E-ring from rear outside end of stop shaft (Figure 5), and slide shaft out through the front of terminal

9. Remove primary pulley (67T). (PL 5.6A)

a. Remove drive belt from pulley.

b. Loosen set screw in pulley, and remove pulley (Figure 6).
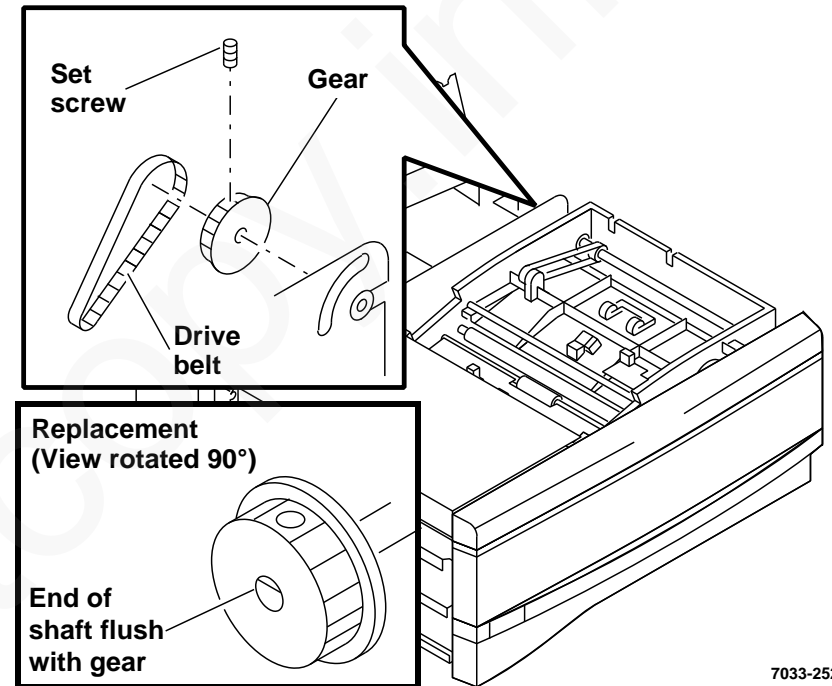
Figure 6. Pulley removal

10. Remove frame assembly. (PL 5.6B)

   a. Disconnect P/J109 and P/J111 (RX only) from main PWB.

   b. Remove E-ring from front of hinge shaft, and remove bearing (Figure 7).
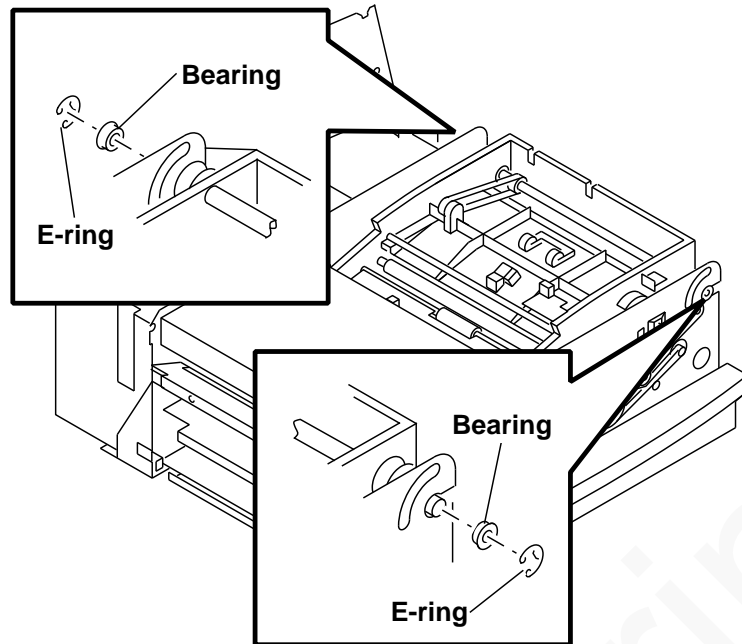
7033-253

Figure 7. Printer frame removal

   c. Remove E-ring from rear of hinge shaft, and remove bearing (Figure 7).

   d. Pull printer cover frame assembly away from terminal.

11. Remove secondary pulley (22T). (PL 5.6A)

   a. Remove E-ring from front of hinge shaft, and remove front bearing (Figure 7).

   b. Remove E-ring from rear of hinge shaft, and remove bearing (Figure 7).

   c. Remove two inner bearings from hinge shaft.
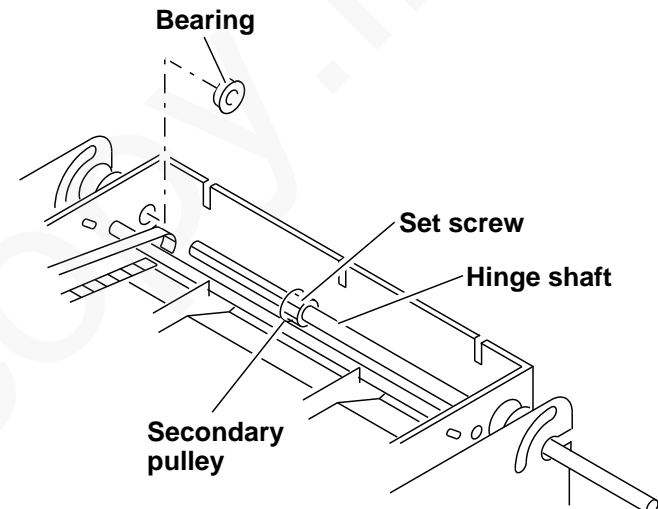
7033-254

Figure 8. Pulley removal

   d. Remove belt from secondary pulley.

   e. Loosen set screw in pulley.

   f. Slide shaft to the front until it clears the rear of printer frame, keeping the rear shaft core and spring in place.

   g. Remove bearing from end of shaft.

   h. Remove pulley from shaft.

12.   Remove pressure roller, pulley, and gear. (PL 5.6B)

a.   Remove drive belt from rear of the pressure roller pulley (Figure 9).

b.   Loosen set screw in the pulley, remove pulley, and slide bearing off end of pressure roller shaft.

c.   Remove E-ring, gear, and bearing from front end of pressure roller shaft.

d.   Remove pressure roller.

7033-255
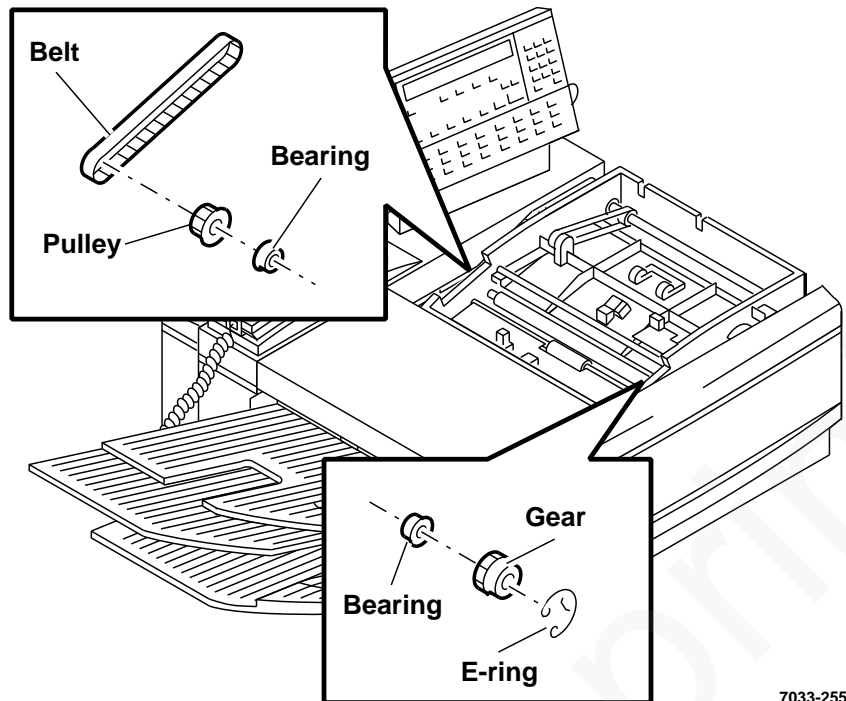
Figure 9. Pressure roller, pulley, and gear removal

13.   Remove pressure roller idler shaft. (PL 5.6A)

a.   Remove drive belt #2 from rear pulley (Figure 10).

b.   Slide pressure roller idler shaft drive belt off of front pulley.

c.   Loosen set screw in rear pulley, and remove pulley and bearing from shaft.

d.   Remove E-ring and bearing from front end of shaft.

e.   Loosen set screw in front pulley, and pull shaft out towards the rear of the frame.

7033-256
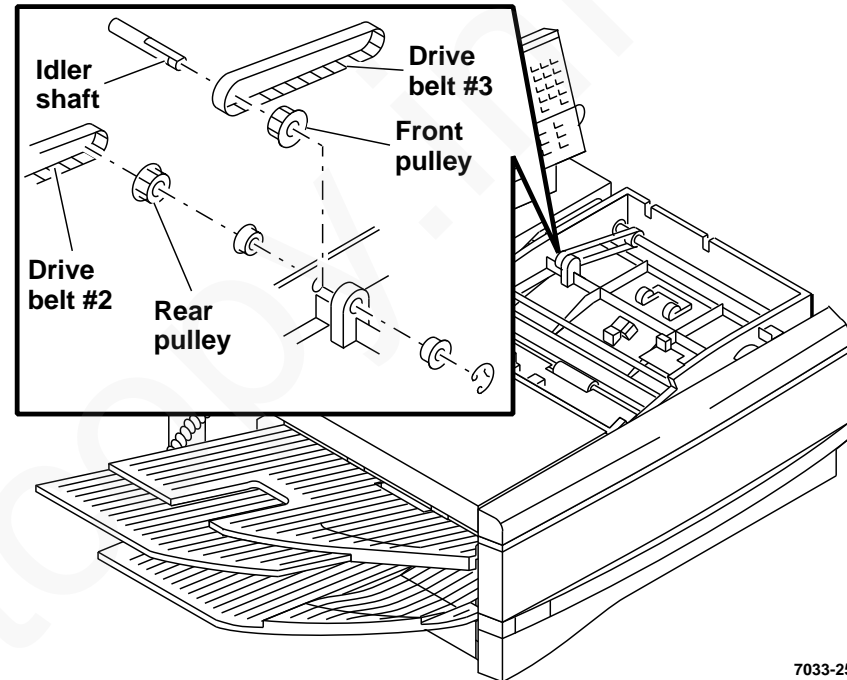
Figure 10. Pressure roller idler shaft removal

14.   Remove release latches. (PL 5.6B)

a.   Loosen screw in rear release latch, and slide release latch off of shaft.

b.   Remove spring and latch linkage from the front release latch.

c.   Slide shaft assembly out the front of the frame.

Replacement

CAUTION
Ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shield and electrical box.

1.   Perform removal procedure in reverse order.

4.5 Lower Printer Assembly
Parts List on PL 5.7A, 5.7B, 5.8 and 5.9

Perform the indicated steps to remove a desired part.

Thermal Head Assembly	11											
Low Paper Sensor	3	6	7	8	12							
Paper Out Sensor	13											
Area #1 Jam Sensor	14											
Paper Guide Assembly	1	2	3	4	6	7	8	14	15			
Printer Interlock Switch	3	6	7	8	16							
Paper Feed Motor	1	2	3	4	6	7	8	15	17			
Printer Motor	3	6	7	8	9	18						
Right Cover Latch Switch	6	7	8	19								
Clutch Assembly	3	4	6	7	8	9	20					
Feed Shaft Assembly	3	4	6	7	8	9	20	21				
Belt (Paper Input Rollers #1 and #2)	1	2	3	4	6	7	8	15	22			
Roller Shaft Pulley	1	2	3	4	6	7	8	15	23			
Shaft Joint, Paper Input Roller #1	1	2	3	4	6	7	8	15	24			
Paper Input Roller #1	1	2	3	4	6	7	8	15	22	23	24	25
Paper Input Roller #2	1	2	3	4	6	7	8	15	22	23	26	
Thermal Head Sensor Pulley, Lever, Sensor Actuator	3	4	27									
Pulley Support	3	4	27	28								
Thermal Head Lever Assembly	3	4	29									
Guide Block	3	4	30									
Thermal Head Cam Shaft	3	4	29	31								

Perform the indicated steps to remove a desired part.

Separator Shaft Lever	3	4	32						
Separator Shaft	3	4	32	33					
Separator Shaft Lever Linkage	3	4	32	34					
Linkage #1	3	4	5	35					
Linkage #2	3	4	36						
Donor Film Support Assembly (Front, Left, or Right)	3	4	37						
Belt, Donor Film Drive Assembly	3	6	7	8	9	10	38		
Donor Film Support (Left, Rear)	3	6	7	8	9	10	39		
Donor Film Support (Right, Rear)	3	6	7	8	9	10	38	40	
Pulley, Donor Film Drive Assembly Pulley	3	6	7	8	9	38	41		
Pulley, Donor Film Drive Assembly	3	6	7	8	9	10	38	41	42
Paper Feed Solenoid	3	6	7	8	9	43			
Donor Film Indicator and Spring	44								
Donor Film Indicator Linkage	44	45							

Removal

1. Remove printer cover assembly. (PL 5.1A)

    a. Disconnect power cord.

    b. Lower the right side cover.

    c. Open printer top cover.

    d. Loosen four top cover screws.

    e. Partially close the upper printer, and remove the cover. The left end must be lifted up first, and then slide the cover away from upper printer hinge shaft.

2. Remove right side cover. (PL 5.1A)

    a. Lower the right side cover.

    b. At the terminal frame, remove the screw securing the nylon restraint.

    c. Single tray unit. Slide door away from frame.

    d. Double tray unit. Slide auxiliary paper tray out approximately 4 to 6 inches.

    e. Double tray unit. Slide front end of door away from frame, then pull out back end of door from frame.

3. Remove left side cover. (PL 5.1A)

    a. Disconnect power cord.

    b. Remove document and copy output trays.

    c. Remove three (3) screws securing left side cover.

    d. Slide out left side cover.

4. Remove lower front cover. (PL 5.1A)

   a. Remove the screw from the right end of the cover (Figure 1).

Remove screw

Lower front cover

Loosen screw

7033-225

Figure 1. Lower front cover removal.

   b. Loosen the screw on the left end of the cover.

   c. Slide cover to the right, and remove.

5. Remove upper front cover. (PL 5.1A)

   a. Loosen two screws securing front top cover.

   b. Lift up cover.

6. Remove control panel. (PL 5.1A)

   a. Disconnect power cord.

   b. Remove control panel bracket rear cover. (One recessed screw in center of cover.)

   c. Disconnect J190 on rear of control panel.

   d. Loosen three screws securing the control panel to the bracket (Figure 2).

   e. Lift off the control panel.

Loosen screws

Machine Front

J190

7033-226

Figure 2. Control panel removal

7. Remove rear cover. (PL 5.1A)

a. Disconnect power cord, telephone line cord, and handset cord from rear of terminal, and remove handset from cradle.

b. Remove PWB access cover.

   If installed, disconnect RS-232 and/or encryption interface cable(s).

   Remove one screw securing panel.

c. Remove left rear cover screw (Figure 3).

Remove screw

Remove screw

Remove screw

7033-227

Figure 3. Rear cover removal

d. Lower the right side cover, and remove right rear cover screw.

e. Remove one screw (on rear of terminal) securing rear cover.

f. While lifting rear cover up, pull bottom sides away from terminal.

8. Remove EMI shield. (PL 5.10)

a. Loosen five screws (Figure 4).

b. Lift off EMI shield.

Loosen screws

Loosen screws

EMI shield

7033-228

Figure 4. EMI shield removal

CAUTION

During replacement, ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shield and electrical box.

9. Remove electrical box assembly. (PL 5.10)

a. Disconnect the following connectors from the main PWB:

• P101	• P105	• P107
• P108	• P109	• P111 (RX only)
• P400	• P600	• P104
• P102	• P110	• P106

b. Disconnect the speaker in-line connector (P/J191).

c. Remove the wire harnesses from the slot above the speaker.

d. Remove the five screws securing the ground straps to the electrical box.

4.5 Lower Printer Assembly

Telecopier 7032 / 7033 Service Manual

e. Remove auxiliary tray connector bracket (Figure 5).

**Auxiliary tray
connector bracket**

**Machine
Front**

Electrical box

7033-277
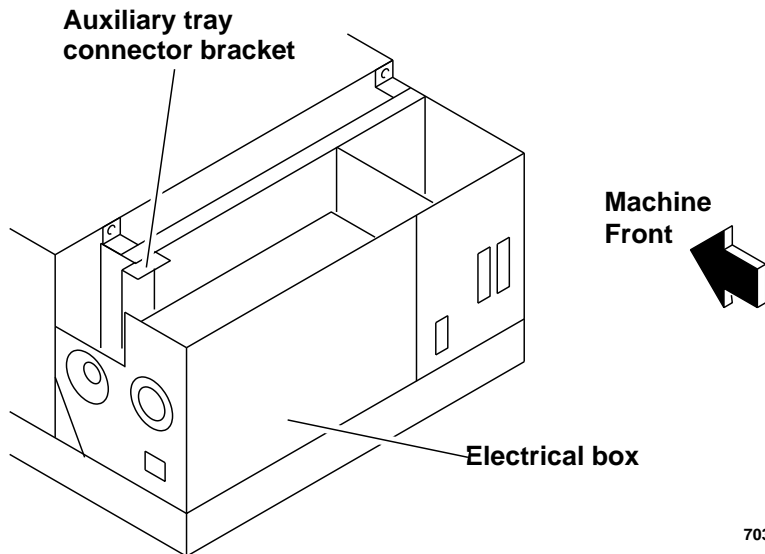
Figure 5. Auxiliary tray bracket removal

f. Remove the screw securing the video harness ground clip to the electrical box.

g. Remove six screws securing electrical box assembly to terminal (two on each end and two on the inside bottom of the box).

h. Lift the left end of the electrical box and pull the auxiliary tray harness out through the bottom slot of the box.

Belt

**Plastic
wire
guide**

7033-244
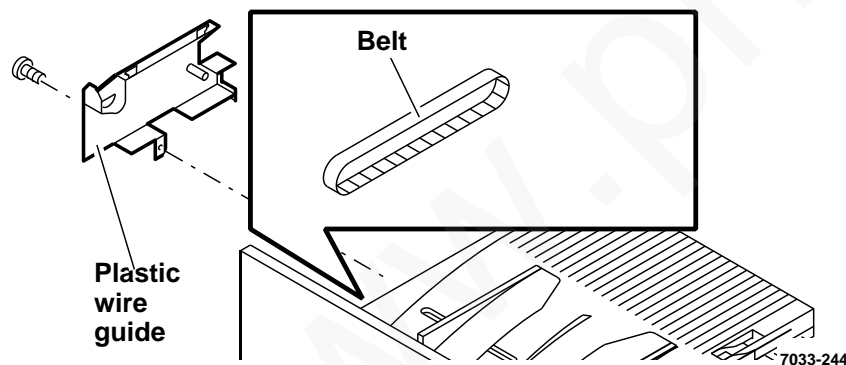
Figure 6. Paper output drive belt removal

10. Remove paper output drive belt. (PL 5.4B)

a. Remove securing screw and remove plastic wire guide (Figure 6).

b. Remove belt from pulley.

11. Remove thermal head. (PL 5.7A)

a. Disconnect power cord.

b. Open upper printer cover.

c. Remove donor film cartridge.

d. Remove front E-ring from rear of thermal head assembly.

e. Slide thermal head assembly to front slot in thermal head shaft and remove front of thermal head assembly from shaft (Figure 7).

f. Remove second E-ring at rear of thermal head assembly.

Rear slot

Front slot

**Thermal head
assembly**

7033-257
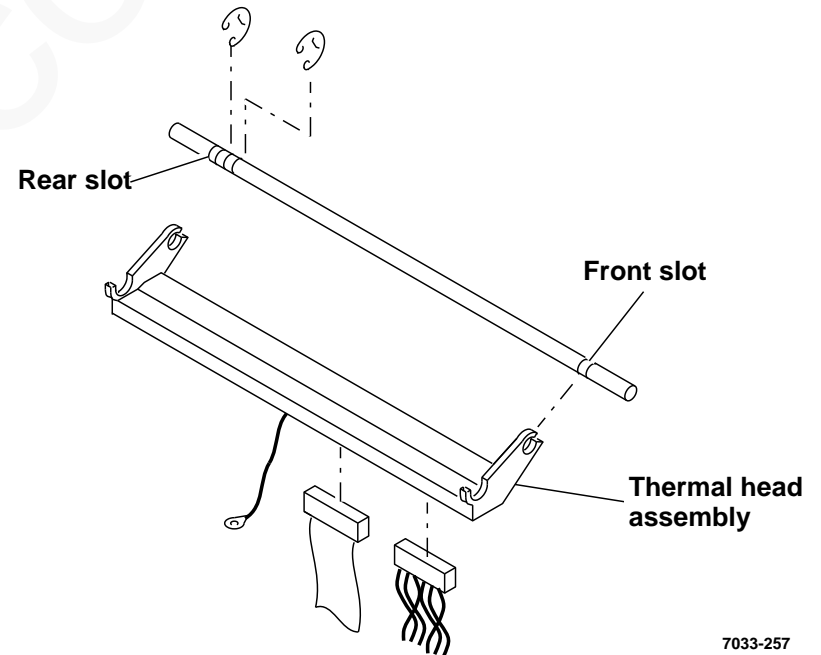
Figure 7. Thermal head removal

g. Slide thermal head assembly to rear slot in thermal head shaft and remove rear of thermal head assembly from shaft.

h. Remove screw securing ground wire to terminal frame.

i. Disconnect P/J195 and P/J401 from bottom of thermal head assembly and lift thermal head assembly from terminal.

12. Remove low paper sensor. (PL 5.7A)

a. Disconnect in-line connector P161.

b. Release tabs on sensor holder (Figure 8), and remove sensor.
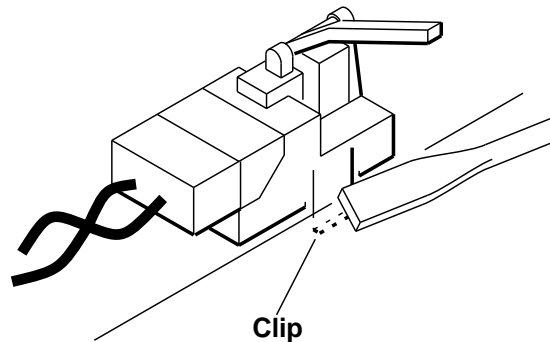
Figure 8. Sensor removal

13. Remove paper out sensor. (PL 5.7A)

a. Disconnect power cord.

b. Open printer cover, and remove donor film carrier.

c. Remove paper tray.

d. Remove screw from small plate securing sensor tabs, and remove plate.

e. Release tabs on sensor holder (Figure 8), and remove sensor.

f. Disconnect connector from switch.

14. Remove area #1 jam sensor. (PL 5.8)

a. Disconnect power cord.

b. Open printer cover, and remove donor film carrier.

c. Remove paper tray.

d. Open right side cover.

e. Release tabs on sensor holder (Figure 8), and remove sensor.

f. Carefully remove connector from sensor.

15. Remove paper guide assembly. (PL 5.8)

a. Disconnect P/J107, 111 (RX only), and 106 at the main PWB.

b. Remove thermal head position linkage drive belt from paper feed motor pulley (Figure 9).
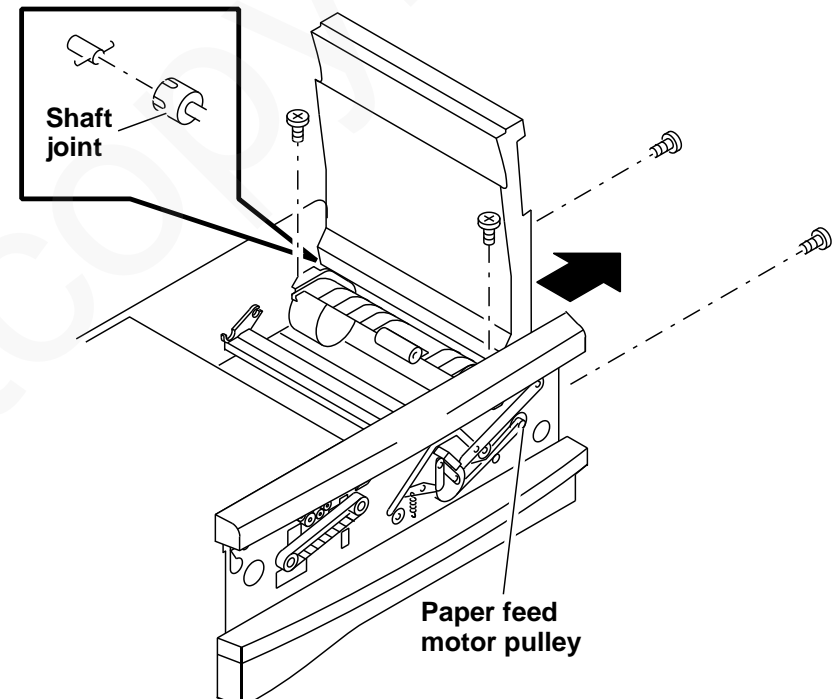
Figure 9. Paper guide assembly removal

c. Open upper printer assembly.

d. Remove two screws at top of paper guide.

e. Remove two screws on right side of paper guide.

f. Slide paper guide to front of terminal to disengage the shaft joint near the rear frame.

g. Remove paper guide through right side of terminal.

4.5 Lower Printer Assembly

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16. Remove printer interlock switch. (PL 5.7B)

 a. Remove donor film cartridge.

 b. Disconnect in-line connector P/J141.

 c. Remove screw securing printer interlock switch.

 d. Remove printer interlock switch.

17. Remove paper feed motor. (PL 5.8)

 a. Remove belts from paper feed motor pulley (Figure 10).

7033-259
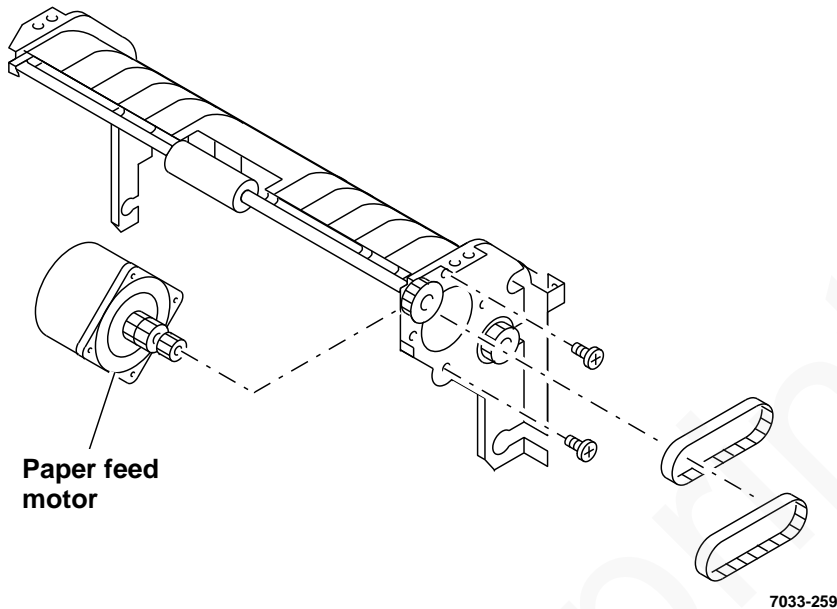
Figure 10. Paper feed motor removal

 b. Remove two screws securing paper feed motor to paper guide bracket.

 c. Remove paper feed motor.

18. Remove printer motor. (PL 5.9)

 a. Remove donor film cartridge.

 b. Disconnect in-line connector P/J121.

 c. Remove three belts from motor pulley (Figure 11).

7033-260
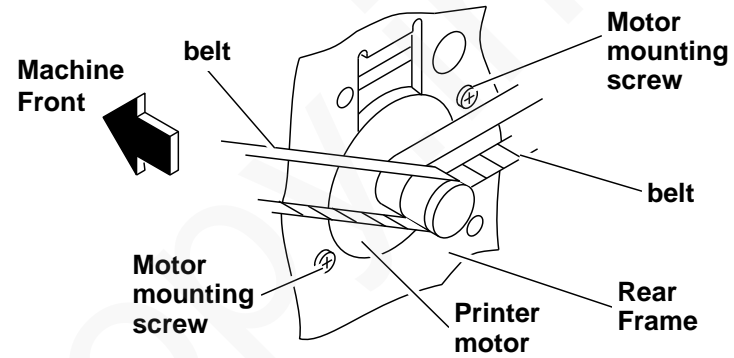
Figure 11. Printer motor removal

 d. Remove two screws securing print motor.

 e. Remove print motor.

19. Remove right cover latch switch. (PL 5.8)

 a. Disconnect in-line connector P/J142.

 b. Remove two screws securing right cover latch switch.

 c. Feed wire through openings in frame and remove right cover latch switch.

20. Remove clutch assembly. (PL 5.9)

a. Remove donor film cartridge.

b. Remove screws securing paper feed solenoid (Figure 12).
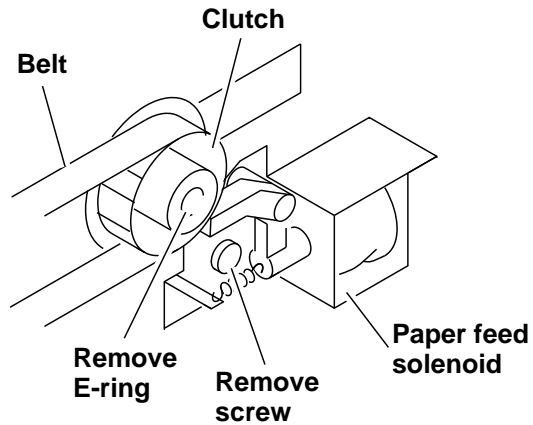
Figure 12. Clutch assembly removal

c. Move solenoid assembly far enough to allow clutch assembly to slide off of shaft.

d. Remove E-ring from rear of feed shaft assembly.

e. Remove belt from clutch assembly.

f. Remove clutch assembly.

21. Remove feed shaft assembly. (PL 5.9)

a. Remove E-ring and bearing from front of shaft.

b. Remove second E-ring and bearing from rear of shaft.

c. Slide shaft to rear to clear front frame and remove shaft from terminal.

22. Remove belts from paper input rollers #1 and #2. (PL 5.8)

23. Remove roller shaft pulleys. (PL 5.8)

a. Remove belts from printer motor assembly pulley (Figure 13).
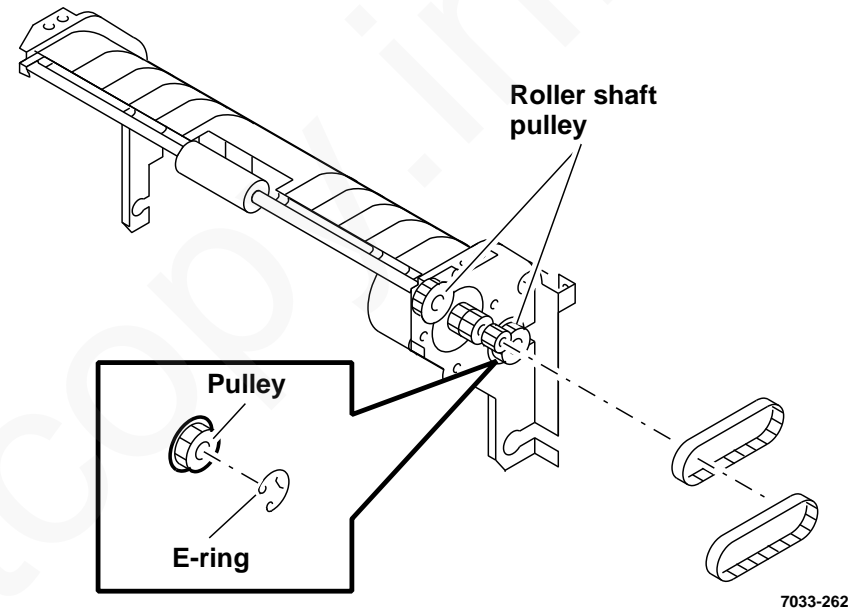
Figure 13. Pulley removal

b. Remove front E-ring from shaft.

c. Remove roller shaft pulley.

24. Remove paper input roller #1 shaft joint. (PL 5.8)

    a. Loosen set screw securing shaft joint (Figure 14).

    b. Remove shaft joint.
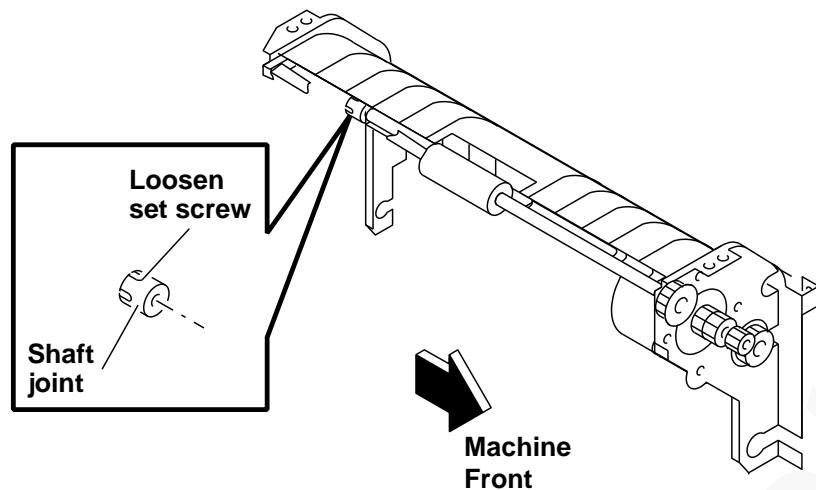
Figure 14. Shaft joint removal

25. Remove paper input roller #1. (PL 5.8)

    a. Remove front and rear bearings.

    b. Remove paper input roller #1.

26. Remove paper input roller #2. (PL 5.8)

    a. Remove E-rings and bearings from front and rear of shaft.

    b. Remove paper input roller #2.

27. Remove thermal head sensor pulley, lever, sensor actuator. (PL 5.7B)

    a. Remove thermal head sensor drive belt.

b. Remove donor film cartridge.

c. Remove screw securing sensor actuator (Figure 15).
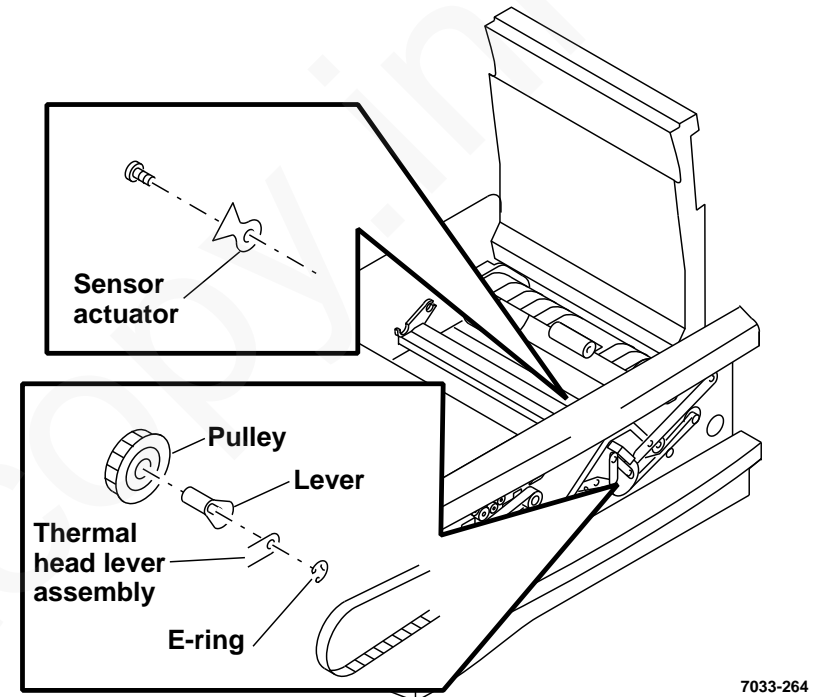
Figure 15. Thermal head sensor pulley, lever, and actuator removal

    d. Remove sensor actuator.

    e. Remove E-ring securing thermal head lever assembly to lever.

    f. Remove lever.

    g. Remove pulley.

28. Remove pulley support. (PL 5.7B)

    a. Remove two screws securing pulley support.

    b. Remove pulley support.

29. Remove thermal head lever assembly. (PL 5.7B)

a. Remove linkage spring (Figure 16).
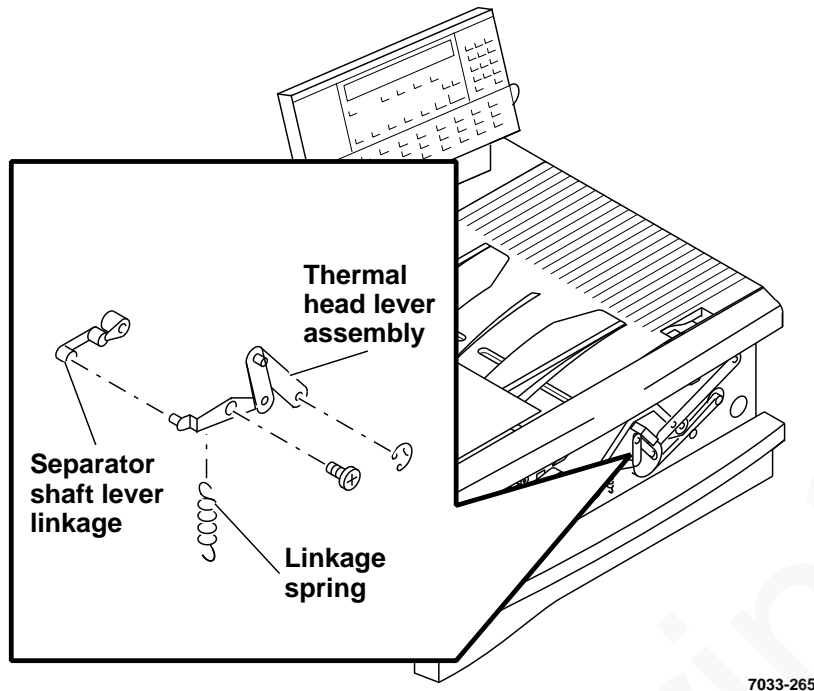
7033-265

Figure 16. Thermal head lever assembly removal

b. Remove screw from front end of thermal head cam shaft (Figure 16).

c. Remove E-ring securing thermal head lever assembly to plate assembly.

d. Remove thermal head lever assembly.

NOTE: During replacement, position pin at left end of thermal head lever assembly into hole in separator shaft lever linkage.

30. Remove guide block. (PL 5.7B)

a. Release bottom end of linkage spring to expose screw (Figure 17).
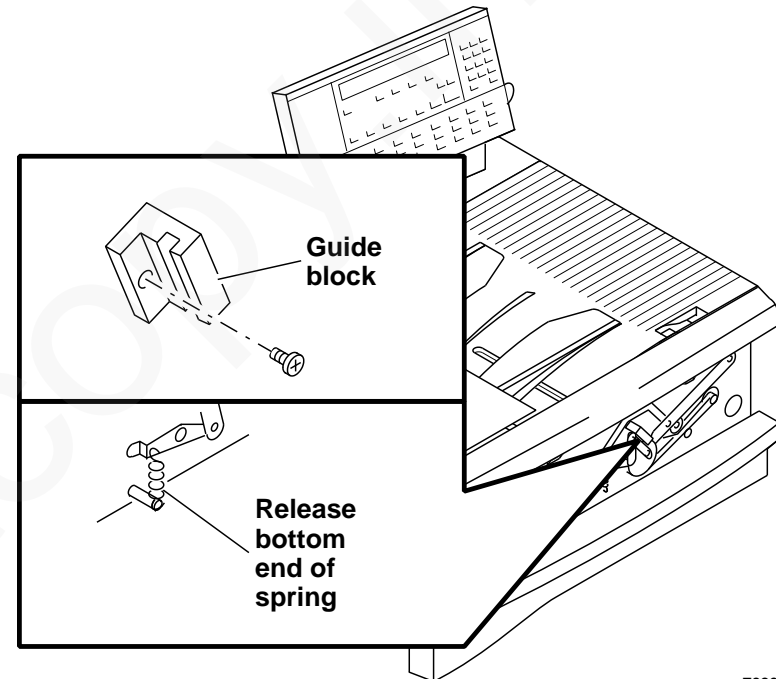
7033-266

Figure 17. Guide block removal

b. Remove screw securing guide block.

c. Remove guide block.

31.   Remove thermal head cam shaft. (PL 5.7B)

a.   Remove donor film cartridge.

b.   Remove E-ring from inside front frame.

c.   Release bottom end of linkage spring (Figure 18).
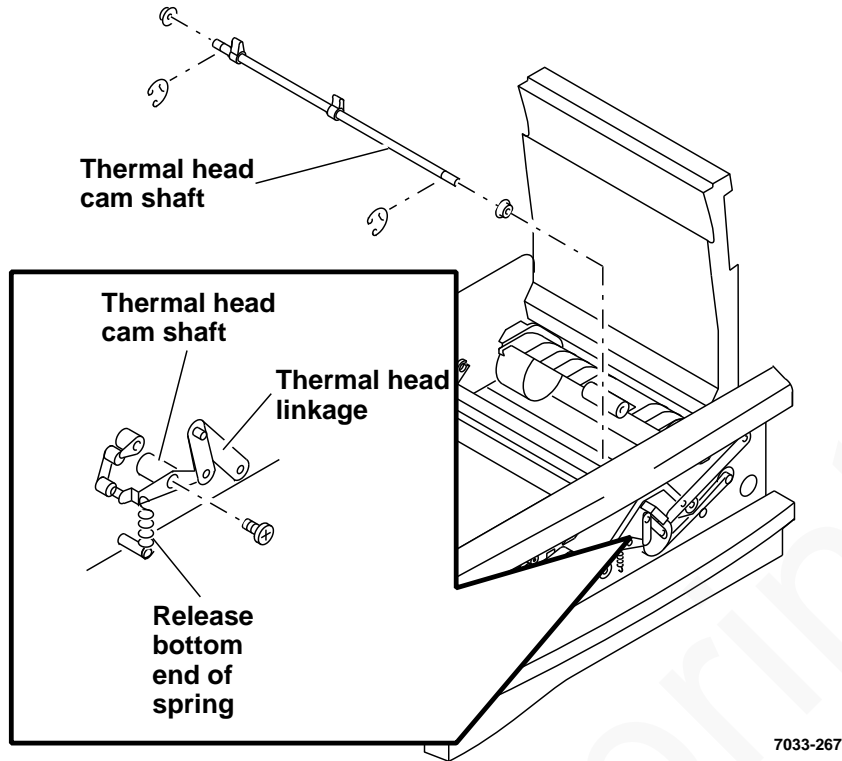
Figure 18.   Thermal head cam shaft removal

d.   Remove screw from front end of shaft and slide thermal head linkage off of shaft.

e.   Slide shaft forward until rear of shaft clears hole in rear frame.

f.   Raise rear of shaft, and slide backward until front of shaft clears hole in front frame, and remove thermal head cam shaft.

g.   If shaft is being replaced, remove bearings and rear E-ring. (Lift left side of thermal head while replacing shaft.)

NOTE: Ensure that the thermal head linkage is repositioned as shown in Figure 18. The right end of the linkage can be installed upside down.

32.   Remove separator shaft lever. (PL 5.7B)

a.   Remove E-ring from front of separator shaft (Figure 19).

b.   Remove separator shaft lever.
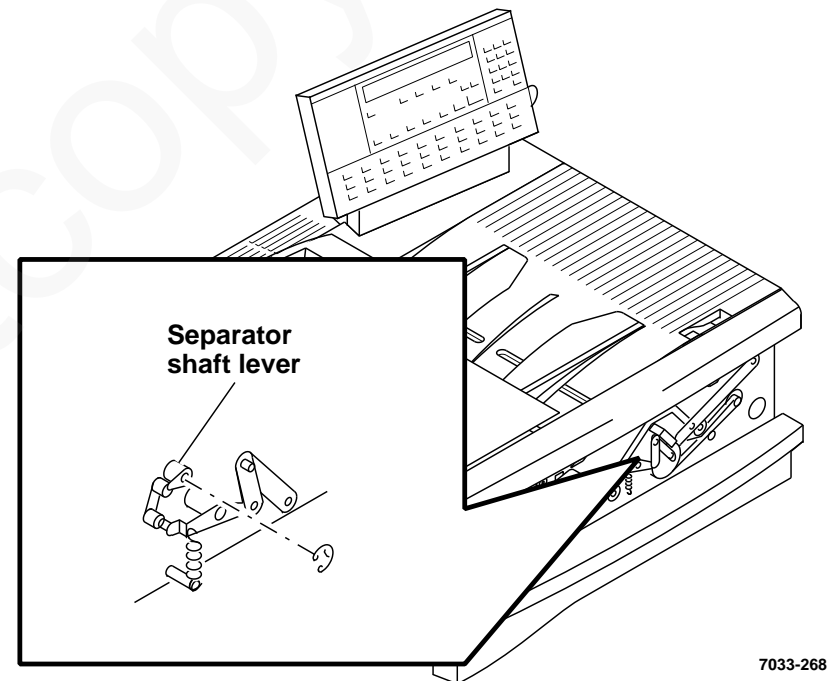
Figure 19.   Separator shaft lever removal

33. Remove separator shaft. (PL 5.7B)

a. Remove film donor cartridge.

b. Remove E-ring from inside front frame (Figure 20).
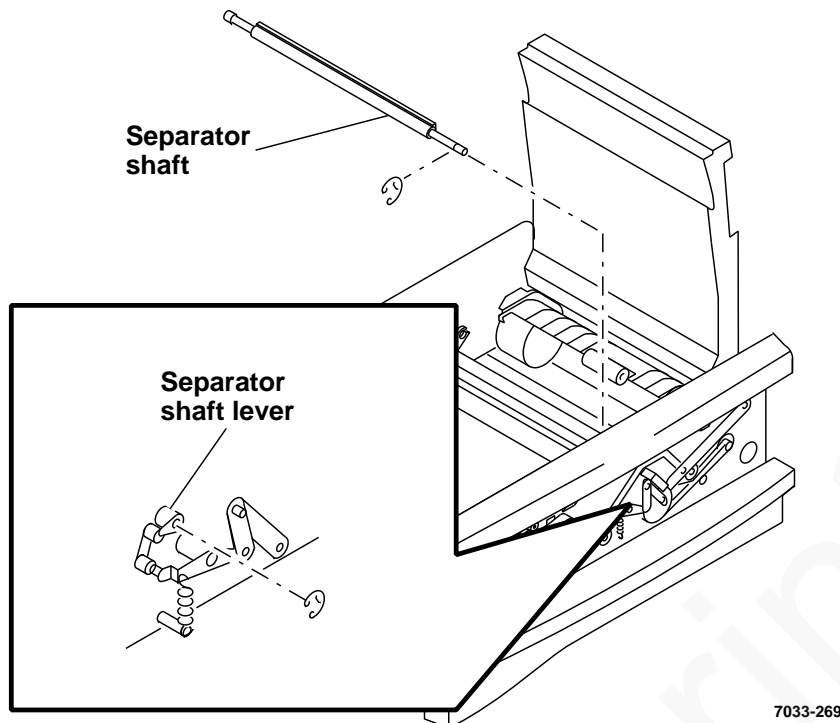
Figure 20. Separator shaft removal

c. Slide shaft forward until rear of shaft clears hole in rear frame.

d. Raise rear of shaft, and slide backward until front of shaft clears hole in front frame, and remove separator shaft.

e. Remove separator shaft.

34. Remove separator shaft lever linkage. (PL 5.7B)

a. Release bottom end of linkage spring (Figure 21).
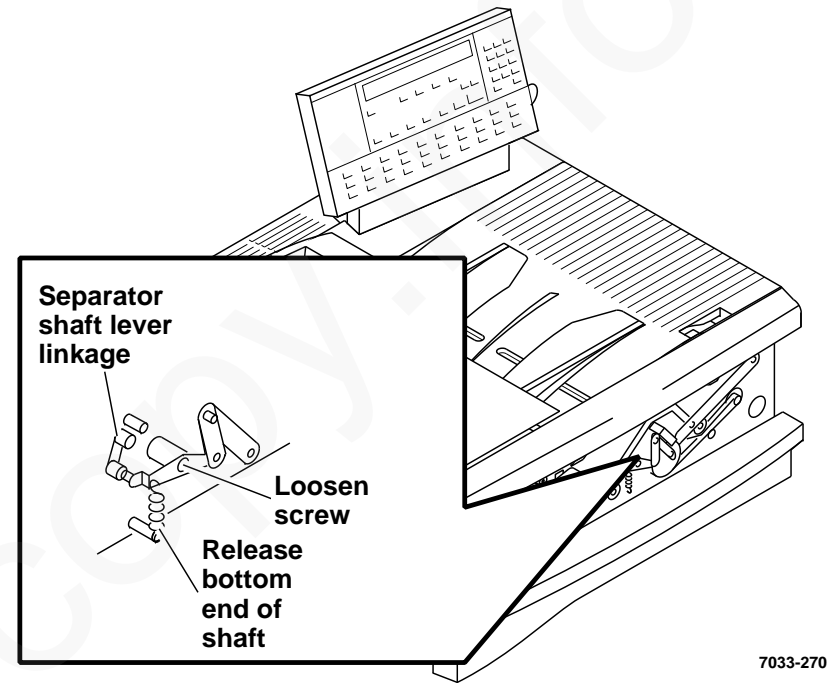
Figure 21. Separator shaft lever linkage removal

b. Loosen screw securing thermal head lever assembly to thermal head cam shaft.

c. Remove separator shaft lever linkage.

35. Remove linkage #1. (PL 5.7A)

a. Remove two E-rings securing linkage #1.

b. Remove linkage #1.

36. Remove linkage #2. (PL 5.7A)

a. Remove two E-rings securing linkage #2 to donor film supports.

b. Remove linkage #2.

37. Remove donor film front support assembly (left, or right). (PL 5.7A)

a. Remove E-ring securing linkage #2 to donor film support being removed (Figure 22).
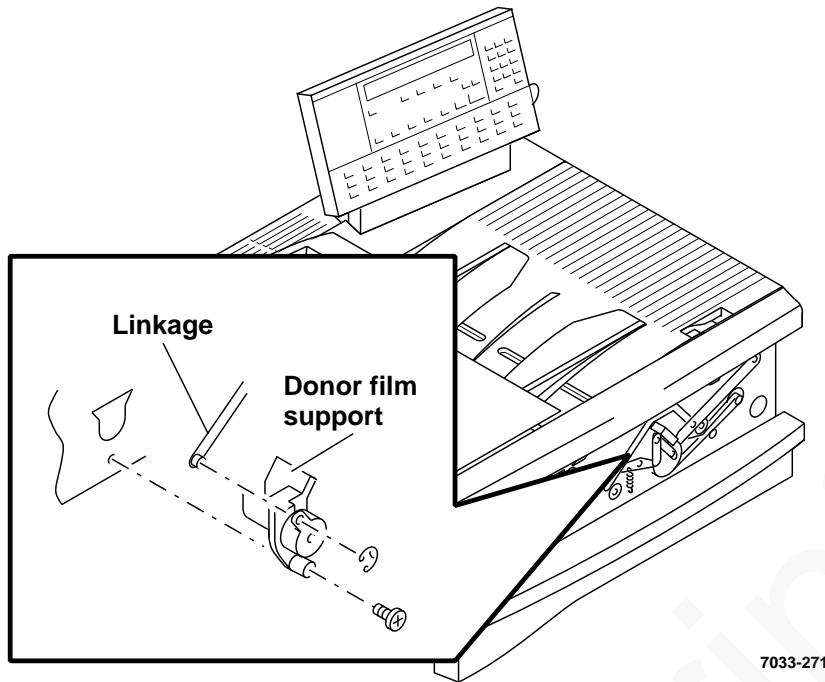
Figure 22. Donor film support assembly removal

b. Remove screw securing donor film support assembly to frame.

c. **Left support only**: Turn paper feed motor shaft clockwise until separator shaft lever linkage clears the upper left hand corner of the donor film support.

d. Remove donor film support assembly.

38. Remove donor film drive assembly belt. (PL 5.7A)

a. Remove upper printer frame hinge shaft drive belt (Figure 23).

b. Remove donor film drive assembly belt.
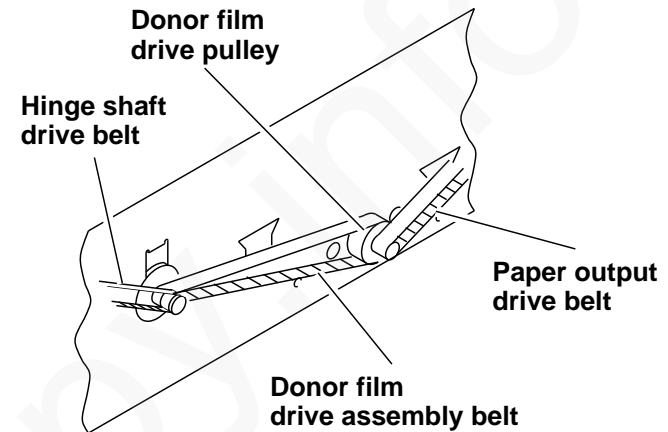
Figure 23. Donor film drive belt removal

39. Remove left, rear donor film support. (PL 5.7A)

a. Remove screw securing donor film support to frame.

b. Remove donor film support.

40. Remove right, rear donor film support. (PL 5.7A)

a. Remove screw securing donor film support to frame.

b. Remove donor film support.

41. Remove donor film drive assembly pulley. (PL 5.7A)

a. Loosen set screw in pulley.

b. Remove pulley.

42.   Remove donor film drive assembly. (PL 5.7A)

a.   Remove donor film cartridge.

b.   Remove three screws securing donor film drive assembly (Figure 24), and remove donor film drive assembly.

Donor film drive assembly

7033-273
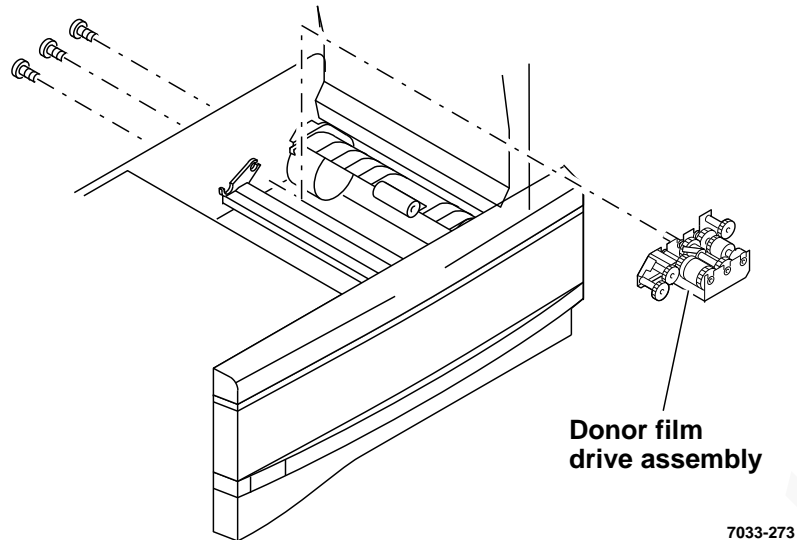
Figure 24. Donor film drive assembly removal

43.   Remove paper feed solenoid. (PL 5.9)

a.   Disconnect in-line connector P/J132.

b.   Remove screw securing paper feed solenoid (Figure 25), and remove paper feed solenoid.

Remove screw

Paper feed solenoid   7033-274
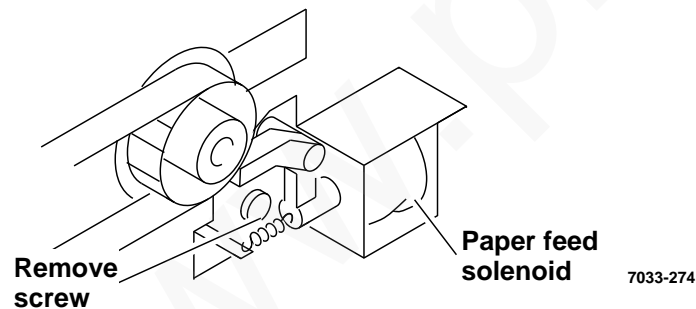
Figure 25. Paper feed solenoid removal

44.   Remove donor film indicator and spring. (PL 5.7B)

a.   Open upper printer cover.

b.   Remove donor film cartridge.

c.   Remove donor film indicator spring.

d.   Remove E-ring securing donor film indicator, and remove donor film indicator.

45.   Remove donor film indicator linkage. (PL 5.7B)

a.   Open right side cover.

b.   Align tabs at ends of donor film indicator linkage with slots in frame, and remove donor film indicator linkage.

Replacement

CAUTION
Ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shield and electrical box.

1.   Perform removal procedure in reverse order.

4.5 Lower Printer Assembly

Telecopier 7032 / 7033 Service Manual

4.6 Electronics

Parts List on PL 5.10

Perform the indicated steps to remove a desired part.

Electrical Box Assembly	1	2	3	4	5	
Power Supply	1	2	3	4	6	
Speaker	1	2	3	7		
RAM/ROM and G3/Coupler PWBs	8					
Modem PWB	8	9				
Main PWB	1	2	3	4	8	10
Telephone line filter (RX)	11					

Removal

1. Remove left side cover. (PL 5.1A)
    a. Disconnect power cord.
    b. Remove document and copy output trays.
    c. Remove three (3) screws securing left side cover.
    d. Slide out left side cover.

2. Remove control panel. (PL 5.1A)
    a. Disconnect power cord.
    b. Remove control panel bracket rear cover. (One recessed screw in center of cover.)
    c. Disconnect J190 on rear of control panel.
    d. Loosen three screws securing the control panel to the bracket (Fig 1).
    e. Lift off the control panel.
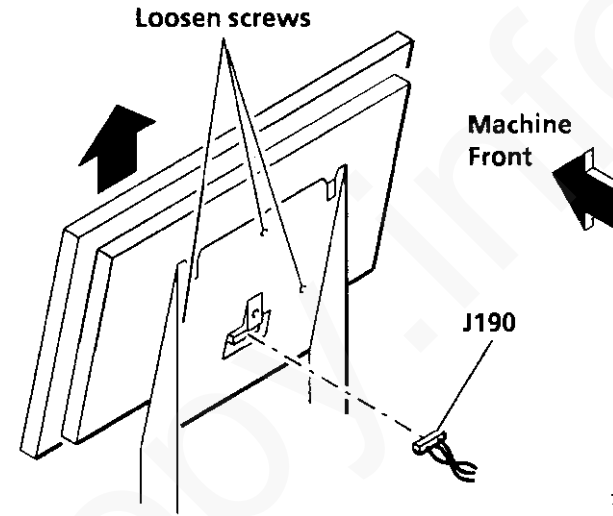
Figure 1. Control panel removal

3. Remove rear cover (PL 5.1A)

    a. Disconnect power cord, telephone line cord, and handset cord from rear of terminal, and remove handset from cradle.

    b. Remove PWB access cover.

        • If installed, disconnect RS-232 and/or encryption interface cables(s).

        • Remove one screw securing panel.
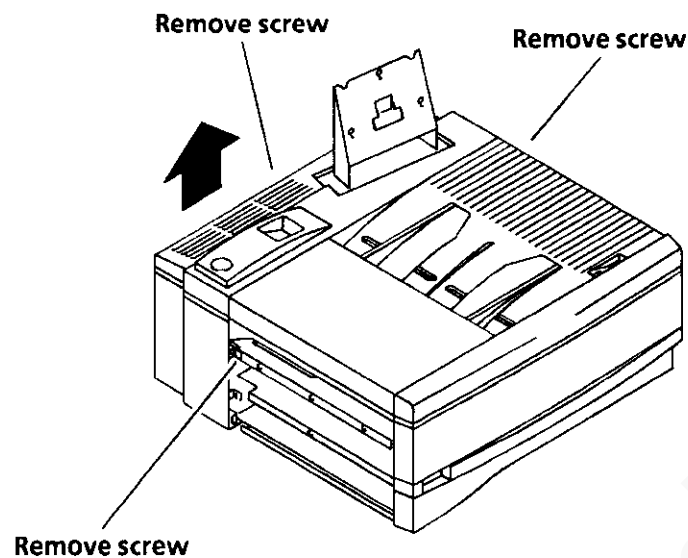
    c. Remove left rear cover screw (Figure 2).

Figure 2. Rear cover removal

    d. Lower the right side cover, and remove right rear cover screw.

    e. Remove one screw (on rear of terminal) securing rear cover.

    f. While lifting rear cover up, pull bottom sides away from terminal.

4. Remove EMI shield. (PL 5.1.0)

    a. Loosen five screws (Figure 3).

    b. Lift off EMI shield.
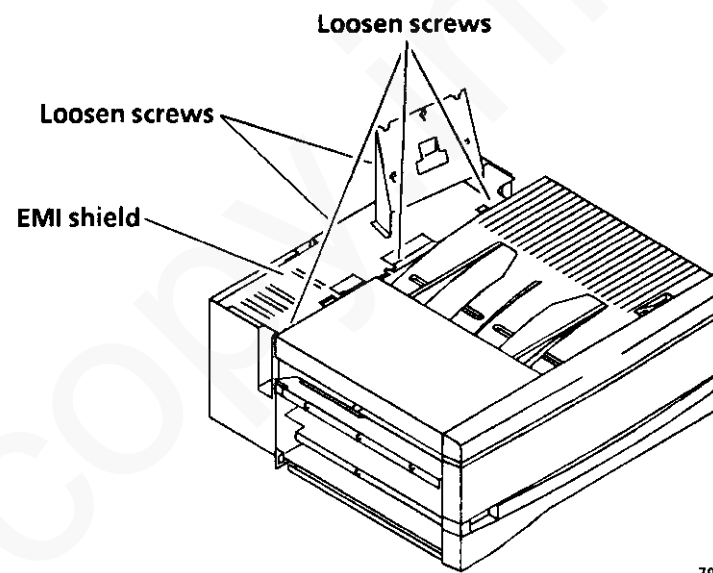
Figure 3. EMI shield removal

CAUTION

During replacement, ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shidl and electrical box.

5. Remove electrical box assembly. (PL 5.10)
    a. Disconnect the following connectors from the main PWB:

P101	P105	P107
P108	P109	P111 (RX only)
P400	P600	P104
P102	P110	P106

    b. Disconnect the speaker in-line connector (P/J191).
    c. Remove the wire harnesses from the slot above the speaker.
    d. Remove auxiliary tray connector bracket (Figure 4).

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Figure 4. Auxiliary tray bracket removal

    e. Remove the five screws securing the ground straps to the electrical box.
    f. Remove the screw securing the video harness ground clip to the electrical box.
    g. Remove six screws securing electrical box assembly to terminal (two on each end and two on the inside bottom of the box).
    h. Lift the left end of the electrical box and pull the auxiliary tray harness out through the bottom slot of the box.

6. Remove power supply. (PL 5.10)
    a. Disconnect P300 at the main PWB, then P193 and P196 at the power supply.
    b. Remove two screws securing power supply to frame.
NOTE: Do not lift power supply by wire harness.
    c. Lift out power supply by grasping in the middle at the cut out.

CAUTION
During reinstallation of the power supply, ensure the international AC Power swtich is set to the same position as was the removed unit. An incorrect setting will result in damage to the new power supply.

7. Remove speaker (PL 5.10)
    a. Remove screw and securing plate from speaker.
    b. Pull speaker out far enough to access in-line connector P/J191, disconnect the connector, and remove speaker.

8. Remove RAM/ROM and G3/coupler PWBs. (PL5.10)
    a. Disconnect power cord.
    b. Remove PWB access cover.
    c. If removing the G3/coupler PWB, loosen securing screw.
    d. Slide board out of electrical box assenmbly.
    e. RX only: Disconnect MJ3 on the coupler PWB. If removing the coupler PWB, disconnect P/J3 on the coupler PWB. Compress the standoffs, and separate the G3 and coupler PWBs.

NOTE: If replacing the RAM/ROM PWB, check the Tag Matrix to see if Tag 4 is installed. If installed, perform ADJ 4.7.4 in thie Section.

9. Remove modem PWB. (PL 5.10)
    a. RX only: Disconnect P/J3 on the coupler PWB. Compress the standoffs, and separate the G3 and coupler PWBs.
    b. Compress te standoff to release PWB.
    c. Pull PWB out of connector J32.

10. Remove main PWB. (PL 5.10)

NOTE: If installed, remove the option PWBs and option mother PWB.

    a. Slide memory expansion PWB out of the option mother PWB.

    b. Slide RS-232 PWB out of the option mother PWB.

    c. Slide encryption interface PWB out of the option mother PWB.

    d. Remove the mounting screw, then slide the option mother PWB to the right to disconnect P1 and lift the board off the guide.

CAUTION
Use a small screwdriver to remove connectors from PWBs.

    e. Disconnect all connectors from the top of the main PWB.

    f. Remove the two screws securing the top of the main PWB to the electrical box.

    g. Slide PWB up and out of the electrical box assembly.

11. Remove telephone line filter PWB (RX). (PL 5.10)

    a. Disconnect power cord.

    b. Remove PWB access cover.

    c. Remove the two screws securing the telephone line filter bracket to the electrical box.

    d. Disconnect P/J2 on the telephone line filter PWB.

    e. Compress the standoffs to release PWB from the bracket.

Replacement

CAUTION
Ensure all wire harnesses feed through the cutouts in the EMI shield. Do not pinch wires between the shield and electrical box.

1. Perform removal procedure in reverse order.

4.7 Adjustments

ADJ 4.7.1 Control Panel Display

Purpose

Adjusts the angle of view on the control panel display.

Adjustment

1. Remove control panel bracket cover. (P5.1A)
2. Adjust pot for desired angle (Figure 1).

Adjustment for display angle
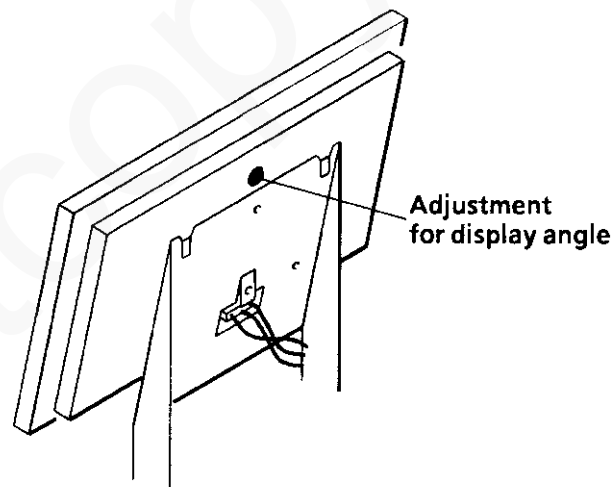
7033-226

Figure 1. Control panel removal

ADJ 4.7.2 Print Registration

1. Enter the service mode.
2. Run test pattern B. (0 then 2 then [Enter])
3. The first line of the test patternshould be 2 mm +/- 1 mm below the lead edge of the paper.
4. Adjst the bit settings of soft switch 048 to increase or decrease the distance from the lead edge of the paper to first line on test pattern B.

NOTE: The range of the bit settings for soft switch 048 is:

> *01000011 = Minimum gap*
> *10111100 = Maximum gap*

Each binary increment advances the lead edge of the paper from the test pattern reference by 0.0847 mm.

ADJ 4.7.3 Scan Registration

1. Ensure that print registration is correct.
2. Run a copy of 82P151 test pattern.
3. Arrows at the top of the test pattern should be at the lead edge of the paper. (Tolerante: 0 +/- 2 mm)
4. Adjust the bit settings of soft switch 047 to increase or decrease the distance from the lead edge of the paper to the arrows.

NOTE: The range of the bit settings for soft switch 047 is:

> *00000000 = Minimum gap*
> *11111111 = Maximum gap*

Each binary increment advances the arrows lead edge of the paper by 0.0847 mm.

ADJ 4.7.4 Tag 4 Soft Switch Check

1. When replacing RAM/ROM PWB, check to see if Tag 4 is installed in the
    terminal. If it is, make sure that Soft Switch 051, Bit 0 is set to 1. If Tag 4 is
    not installed, Soft Switch 051, Bit 0 must be set to 0.

ADJ 4.7.5 Transmit Level Adjustment (RX)
Adjustment

*NOTE: Transmit level on the Coupler PWB is set by the factory to -10dbm. Refer
to Table 1 for the Operating level and adjust if necessary. There are two methods
that can be used for this adjustment.*

Method 1
1. Connect meter across L1 and L2.
    a. Remove telephone cable from L1 and L2.
    b. Connect 600 ohm load resistor across L2 and L1 on the Coupler PWB
    (Refer to Figure 1).
    c. Connect meter across L2 and L1 on the Coupler PWB.
    d. Adjust meter to read volts A.C. Range.

2. Select "Test 17 Freq Test".
    a. Enter Service Mode
    b. Press 1 and 7 on the keypad.
    c. Press Enter.
    d. RX, except Germany: Press Select until display indicates 1650Hz.
    e. RX, Germany: Press Select until display indicates 2100 Hz.

3. Adjust the ATT1 switch on the Coupler PWB to obtain the proper Operating
reading as indicated in Table 1.

NOTE: For location of ATT1 switch, refer to Section 4, page 6-2.

4. Press Stop to end the test.
5. Disconnect meter and remove 600 ohm load resistor.
6. Reconnect telephone to cable L1 and L2.

ADJ 4.7.4 Tag 4 Soft Switch Check
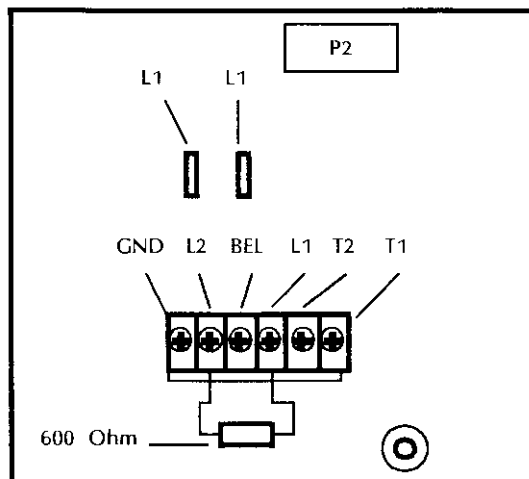
Figure 1 RX: Coupler PWB

Method 2
1. Connect meter across telephone data cable.
   - a. Connect meter across L1 and L2 on the Coupler PWB.
   - b. Adjust meter to read volts AC Range.

2. Establish fax contact.
   - a. Press Poll/Man Rcv to set the machine into Manual Answer Mode.
   - b. Establish direct line fax contact by dialing the machine from a remote telephone.

3. Select "Test 17 Freq Test".
   - a. Enter Service Mode.
   - b. Press 1 and 7 on the keypad.
   - c. Press Enter.
   - d. RX, except Germany: Press Select until display indicates 1650Hz.
   - e. RX, Germany: Press Select until display indicates 2100Hz.

4. Adjust the ATT1 switch on the Coupler PWB to obtain the correct Dbm and Mv readings as indicated in Table 1.

NOTE: For location of ATT1 switch refer to Section 4 pag 6-2.

5. Press Stop to end the test.
6. Disconnect meter.
7. Replace handset on remote telephone.

Table 1. DBm to Mv Conversion

DBm	Mv	DBm	Mv
0	775	8	308
1	690	9	275
2	615	10	245
3	548	11	218
4	489	12	195
5	436	13	173
6	388	14	155
6.5	367	15	138
7	346		

5. Spare Parts List

Section Contents

Introduction

The Spare Parts List consists of a series of illustrations of disassembled subsystems and an associated parts listing.

Each spared part is numbered in the illustration. Hardware items are lettered. Assemblies and kits are a combination of several separate components. These are identified on the illustration with the Part Listing number followed by illustration numbers that make up the assembly. For example: "15{5, 6, 10}."

Corresponding to the illustration is a listing that gives the part number and a description of each spared part in the illustration.

Within the illustrations, and in the listings, various symbols are used. Refer to Introduction, Symbology, for definitions.

PL 5.1A Covers

Item	Part Number	Description	Item	Part Number	Description
1	48K96615	Upper Scanner Assembly	18	48E95984	Access Cover (USO)
2	48E95901	Control Panel Bracket Cover		48E99260	Access Cover (RX)
3	152K89461	Control Panel Harness			
4	101K97606	Control Panel* (USO) Tag 3			
	101K97912	Control Panel* (French Canada) Tag 3		45K95250	Job Card (USO)
	101K98671	Control Panel* (Spain) Tag 3		45K95080	Job Card (RX)
	101K14180	Control Panel* (Brazil) Tag 3		91P80361	Grid Matrix Tag
	101K97617	Control Panel (RX) Tag 3		92E86370	Product Feature Index Label (USO) (7033)
5	92E84260	7032 Control Panel Label			
6	45E96413	One Touch Card (English)		92E86383	Product Feature Index Label (RX) (7033)
	45E91670	One Touch Card (Brazil)		92E83420	Product Feature Index Label (USO) (7032)
7	48E96190	Flip Panel		3E18080	Security Lock Key
8	48K96664	Printer Cover Assembly		45E96572	Operator Guide (English)
	73K68510	Security Lock Cover Assembly		45E97290	Operator Guide (Spanish)
9	91P66413	Customer Assistance Label (USO)		45E91330	Operator Guide (Brazil)
10	48K96763	Right Side Cover (single tray)		97K96160	IDF Flanges, A4 (RX)
11	48E95753	Upper Front Cover		97K96170	IDF Flanges, B4 (RX)
12	48E95771	Lower Front Cover		97K96150	IDF Cartridge Frame (RX)
13	17E95840	Feet		48E95581	IDF Cartridge Frame (US)
14	48K96971	Left Side Cover			
15	48K96696	Rear Cover			
16	68E73971	Control Panel Bracket			
17	30K86101	Option EMI Shield (USO)			
	30K86111	Option EMI Shield (RX)			

For 7032 also order item 5.

Machine front
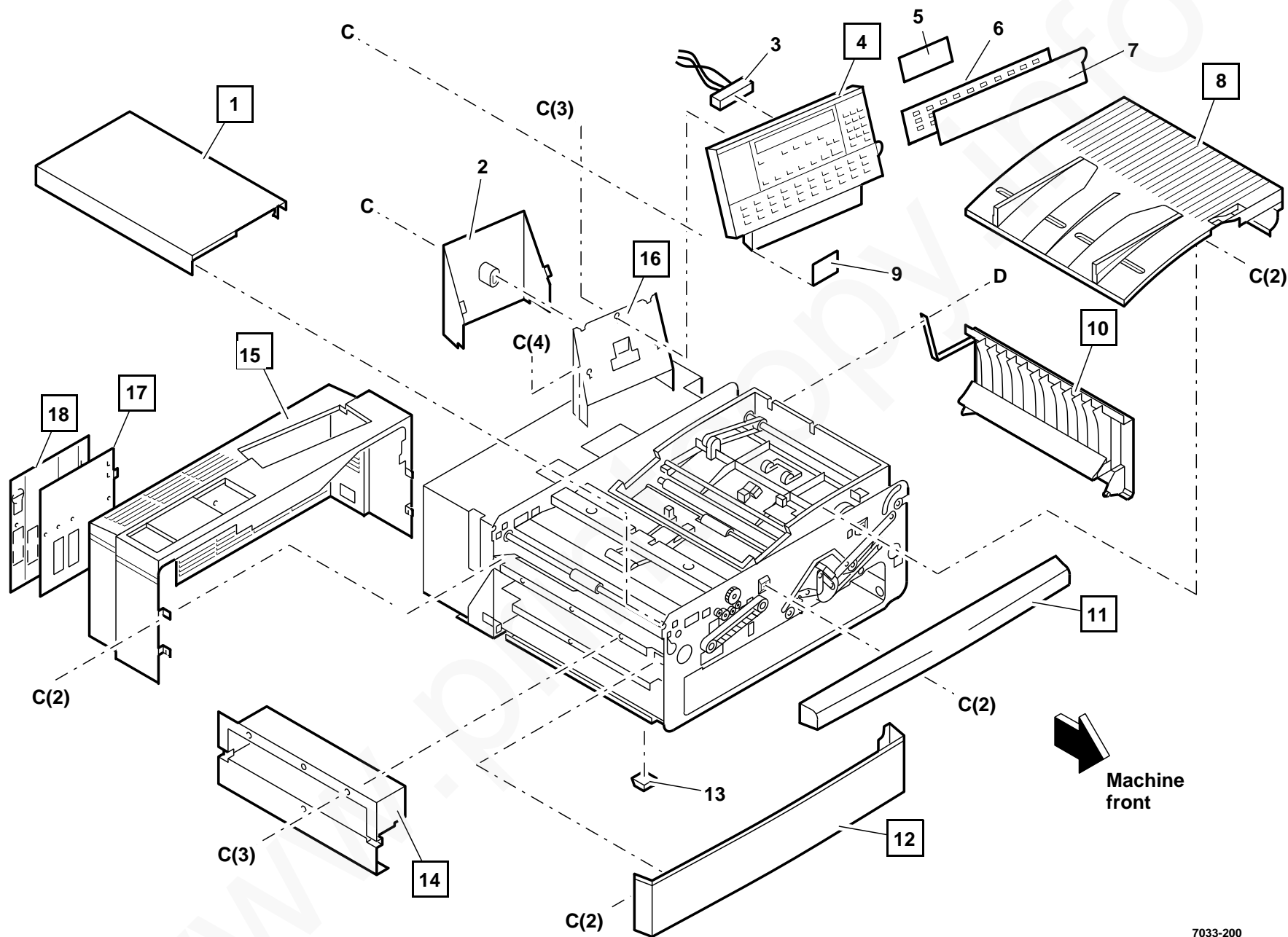
7033-200

PL 5.1B Covers

Item	Part Number	Description
1	110K96960	Handset (USO)
	110K96660	Handset (RX)
2	1K87753	Handset Cradle (USO)
3	1E86162	Handset Cradle (RX)
4	48E95551	Handset cradle cover
5	18E95100	Paper Size Indicator
6	-----	Paper Tray Front Cover
7	-----	Paper Length Block
8	3E86450	Paper Width Button
9	110K96560	Paper Size Sensor
10	50K97756	Paper Tray Assy (USO) (Includes 5, 6, 7, 8)
	50K97766	Paper Tray Assy (RX) (Includes 5, 6, 7, 8)
11	50E96861	Copy Output Tray
12	26P63695	Document Output Tray Fastener
13	-----	Document Output Tray Extension
14	50K97653	Document Output Tray Assy
15	91E77050	Telephone Number Label
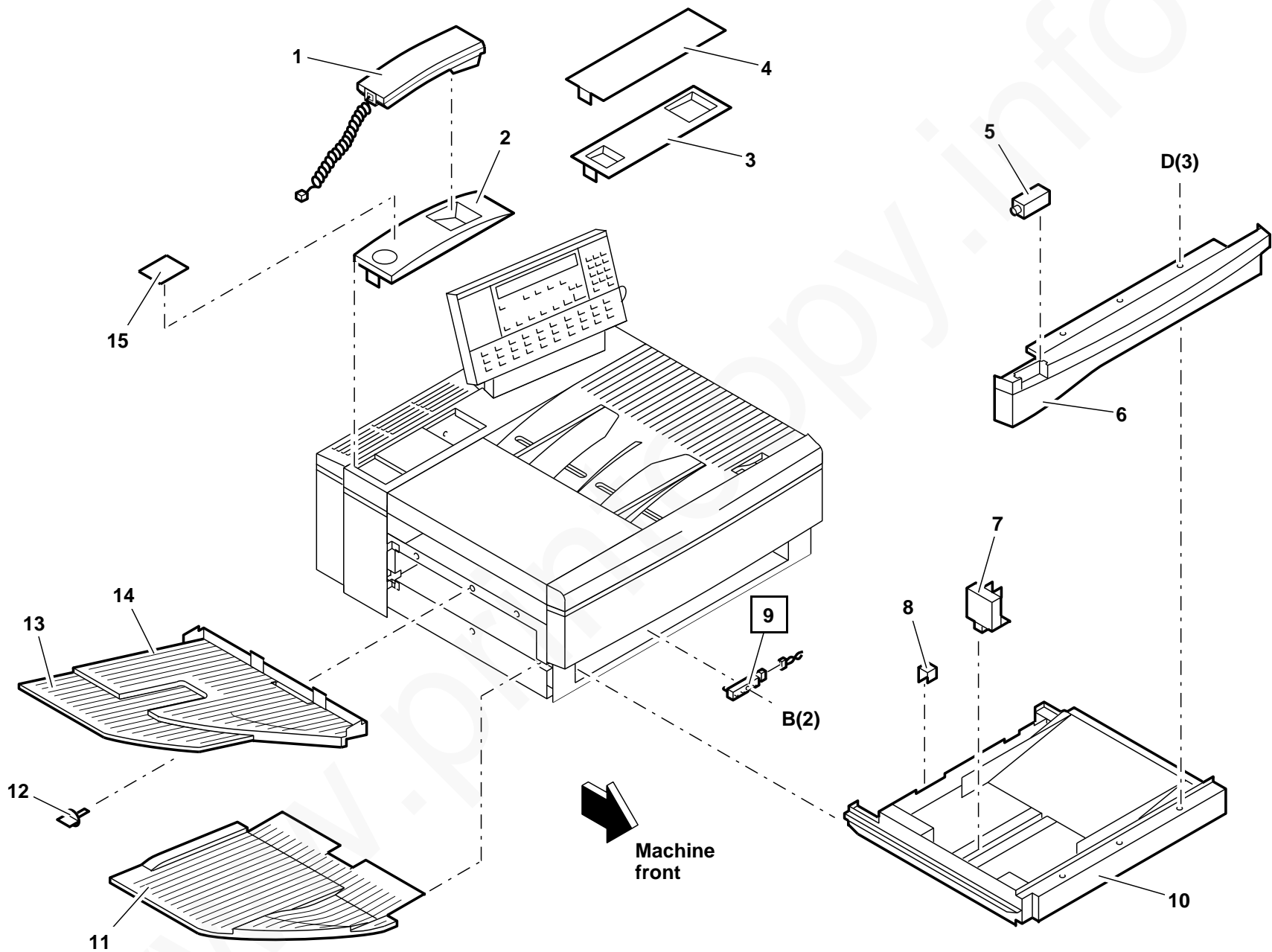
7033-201

PL 5.2A Upper Scanner Assembly

Item	Part Number	Description
1	48K96615	Upper Scanner Assembly
2	-----	Upper Scan Cover
3	-----	Latch Handle
4	-----	Rear Latch
5	-----	Latch Spring
6	9E87881	Rear Hinge Spring
7	13E97941	Rear Bearing
8	-----	Hinge Shaft
9	121K97911	Nudger Solenoid
10	13E98010	Bearing
11	9E87870	Front Hinge Spring
12	-----	Front Latch

1 { 2 - 12, PL 5.2B items 1 - 14

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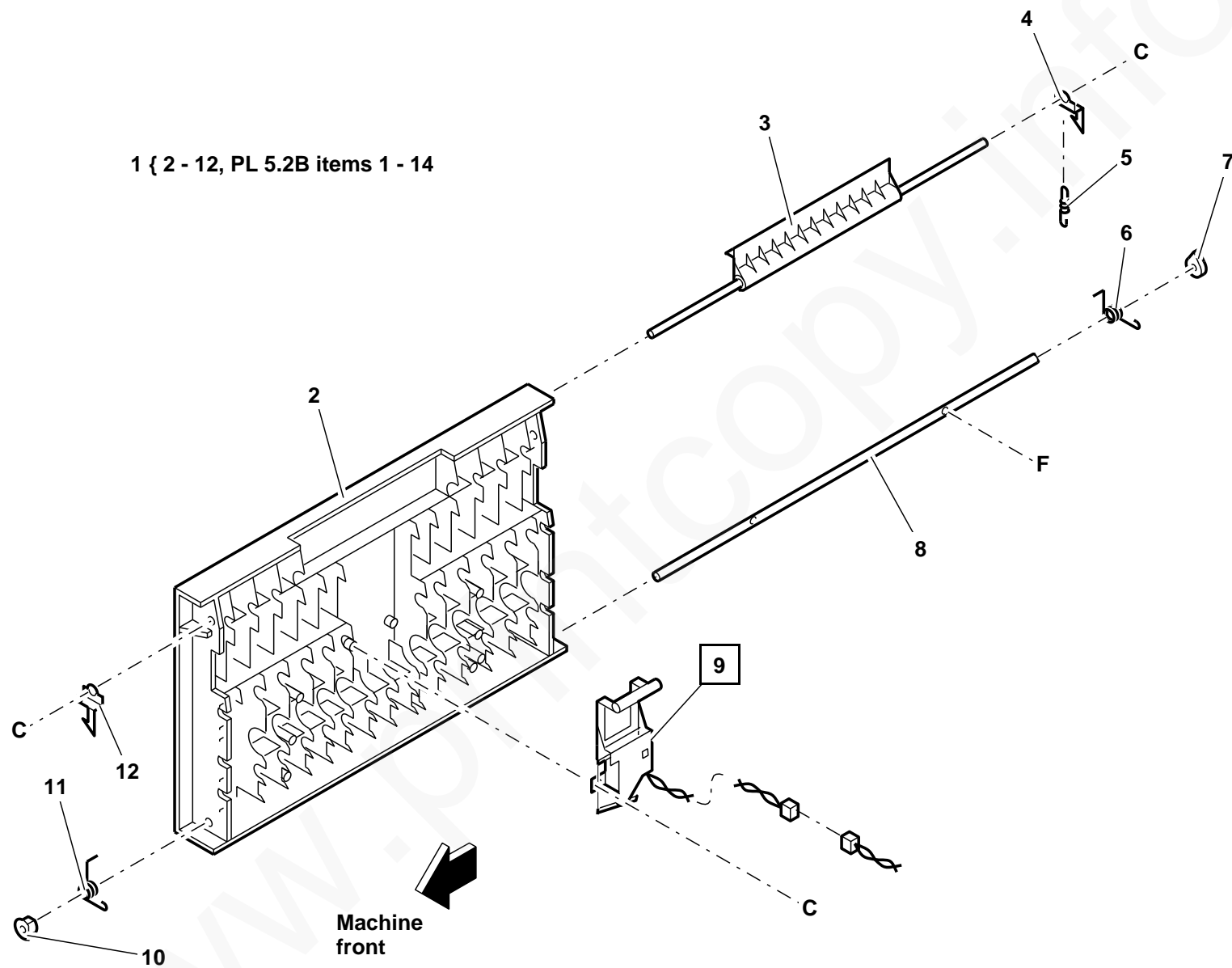
7033-202

PL 5.2B Upper Scanner Assembly

Item	Part Number	Description
1	22K87900	Input Idler Shaft
2	9E88062	Input Idler Shaft Springs
3	-----	Input Idler Shaft Bearings
4	-----	Platen Roller Springs
5	-----	Platen Roller Bearings
6	22K87890	Platen Roller
7	-----	Output Idler Shaft Roller
8	-----	Output Idler Shaft Springs (Gold)
9	-----	Output Idler Shaft
10	-----	Platen Guide
11	-----	Static Eliminator
12	-----	Ground Spring
13	20P61499	Pulley (14T)
14	23E96850	Input Idler Shaft Belt (53MXL)

Machine front
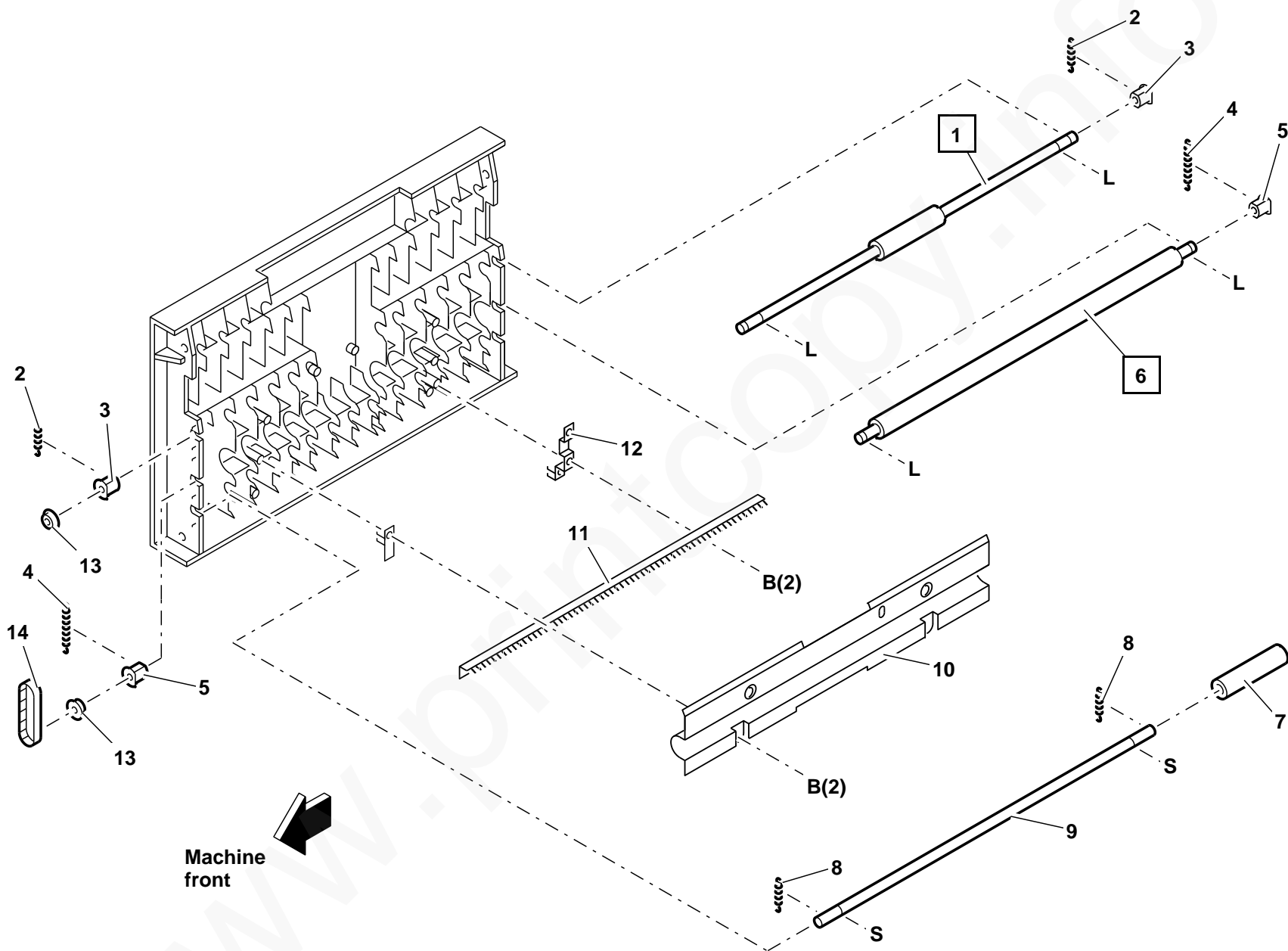
7033-203

PL 5.3 Retard Guide and ADF Cartridge

Item	Part Number	Description
1	38K97101	Retard Guide Assy
2	-----	Retard Plastic Guide
3	7E98870	Retard Rubber Drive Gear
4	23E96050	Belt
5	-----	Hex Tension Roller
6	-----	Hex Tension Roller Shaft
7	9E87862	Hex Tension Roller Springs
8	7E99390	Belt Drive Gear
9	-----	Belt Drive Bearing
10	-----	Belt Drive Shaft
11	-----	Belt Housing
12	-----	Hex Idler Roller Shaft
13	-----	Hex Idler Roller
14	23K95234	Belt Assembly

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Machine
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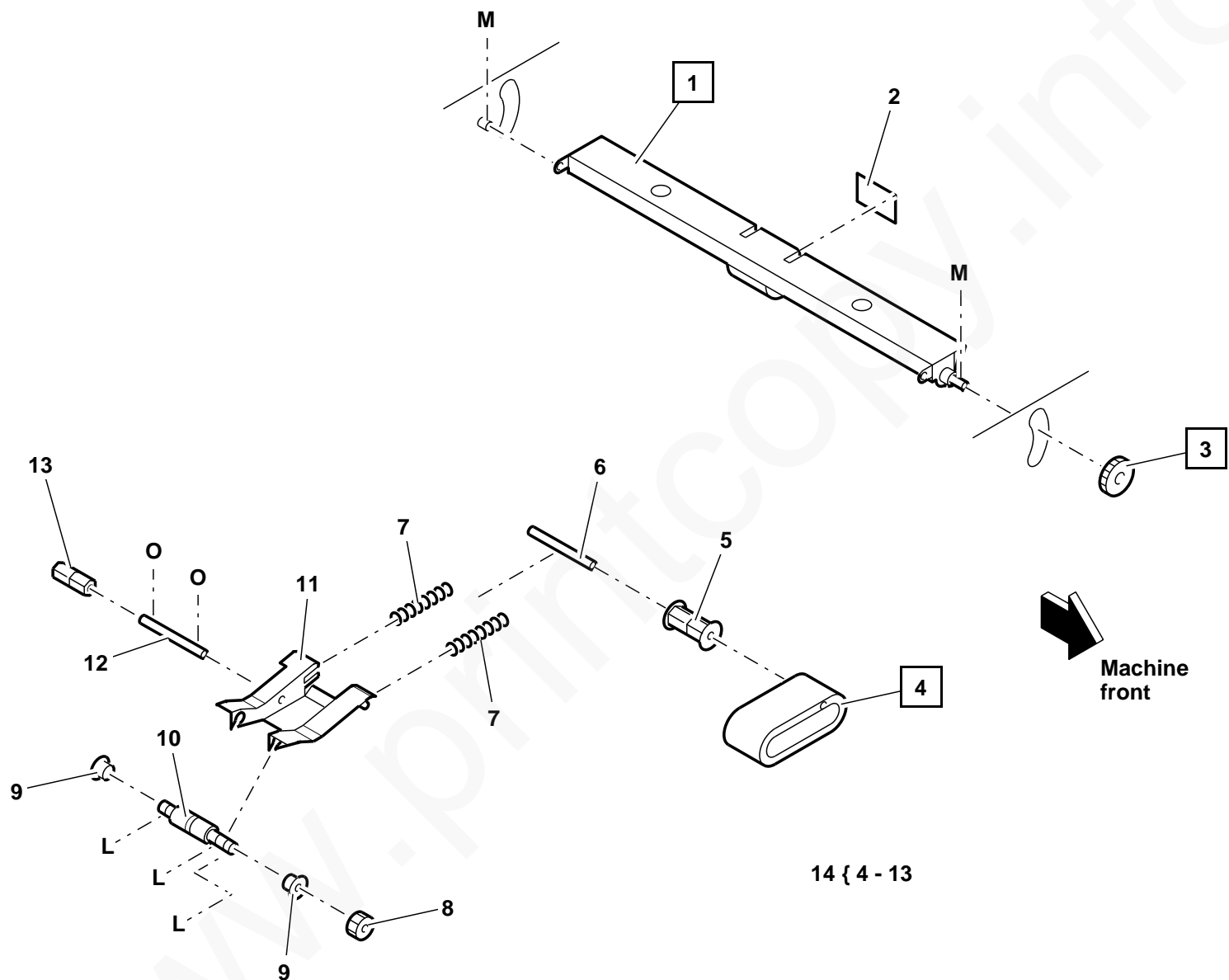
7033-204

PL 5.4A Lower Scanner Assembly

Item	Part Number	Description
1	-----	Sensors Harness
2	130K98560	Scan Position Sensor
3	130K98080	ADF Document Sensor
4	7E99390	ADF Belt Drive Gear
5	68E73681	ADF Cartridge Bracket
6	6E87450	ADF Belt Drive Shaft
7	54K97561	Paper Chute Assembly, Upper
8	7P61817	ADF Transfer Gears (15T)
9	7E98890	ADF Clutch/Gear (21T)
10	13E98010	Bearing
11	130K95150	Area #3 jam sensor
12	62K96272	Video Assembly (A3) (RX)
	62K92020	Video Assembly (B4) (USO)
13	-----	Video Assembly Harness

Machine front
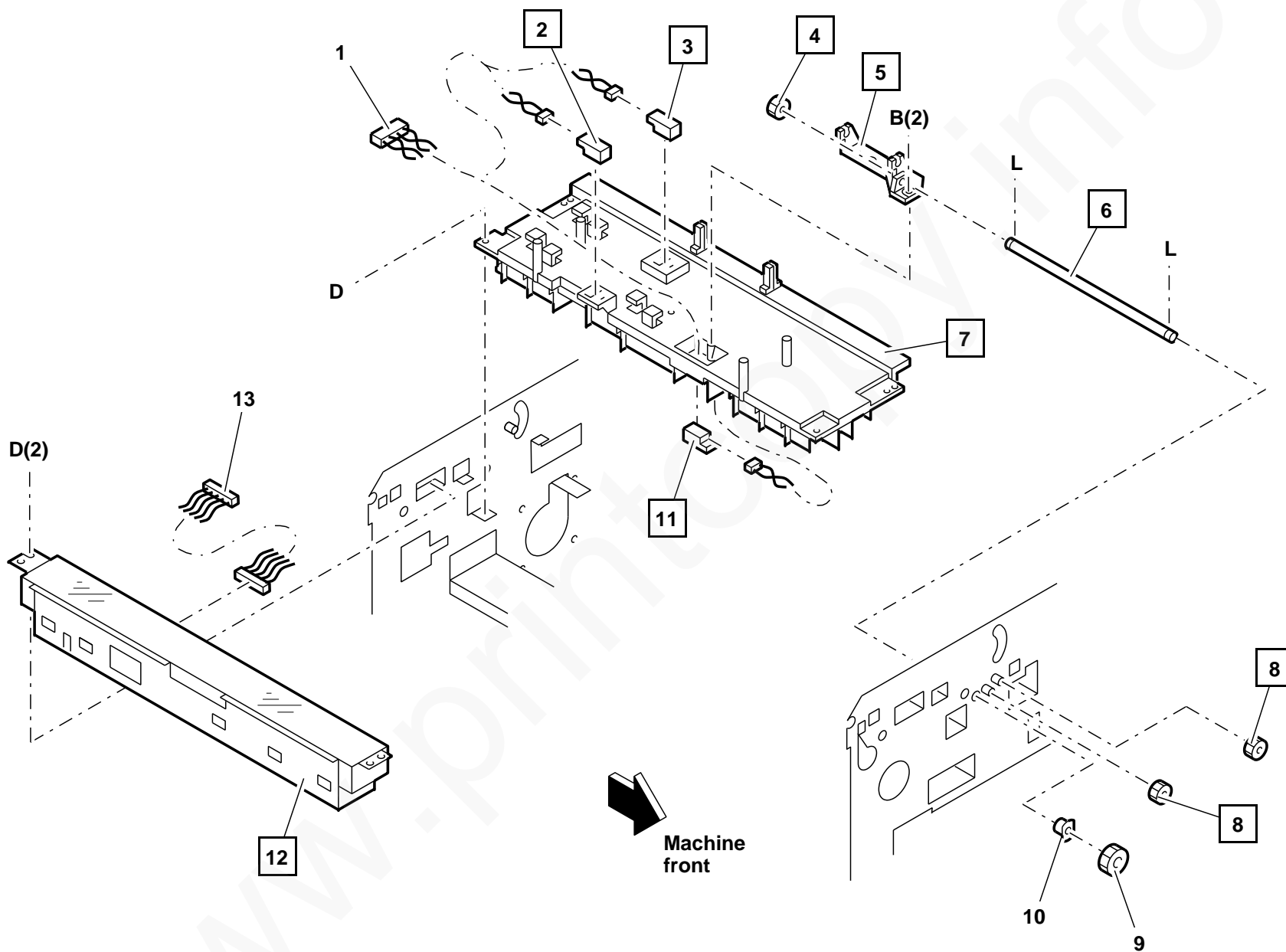
7033-205

PL 5.4B Lower Scanner Assembly

Item	Part Number	Description
1	23E96860	Output Drive Belt (95 MXL)
2	23E96870	Input Drive Belt (131 MXL)
3	20P61497	Pulley (29T)
4	20E96940	Pulley (62T/29T)
5	413W77559	Bearing
6	38E98600	Lower Document Guide
7	127K98640	Scan Motor
8	22K87910	Input Drive Roller
9	13E90840	Bearing
10	7E98880	Input Drive Shaft Gear
11	22K87930	Output Drive Roller

7033-206

Machine
front
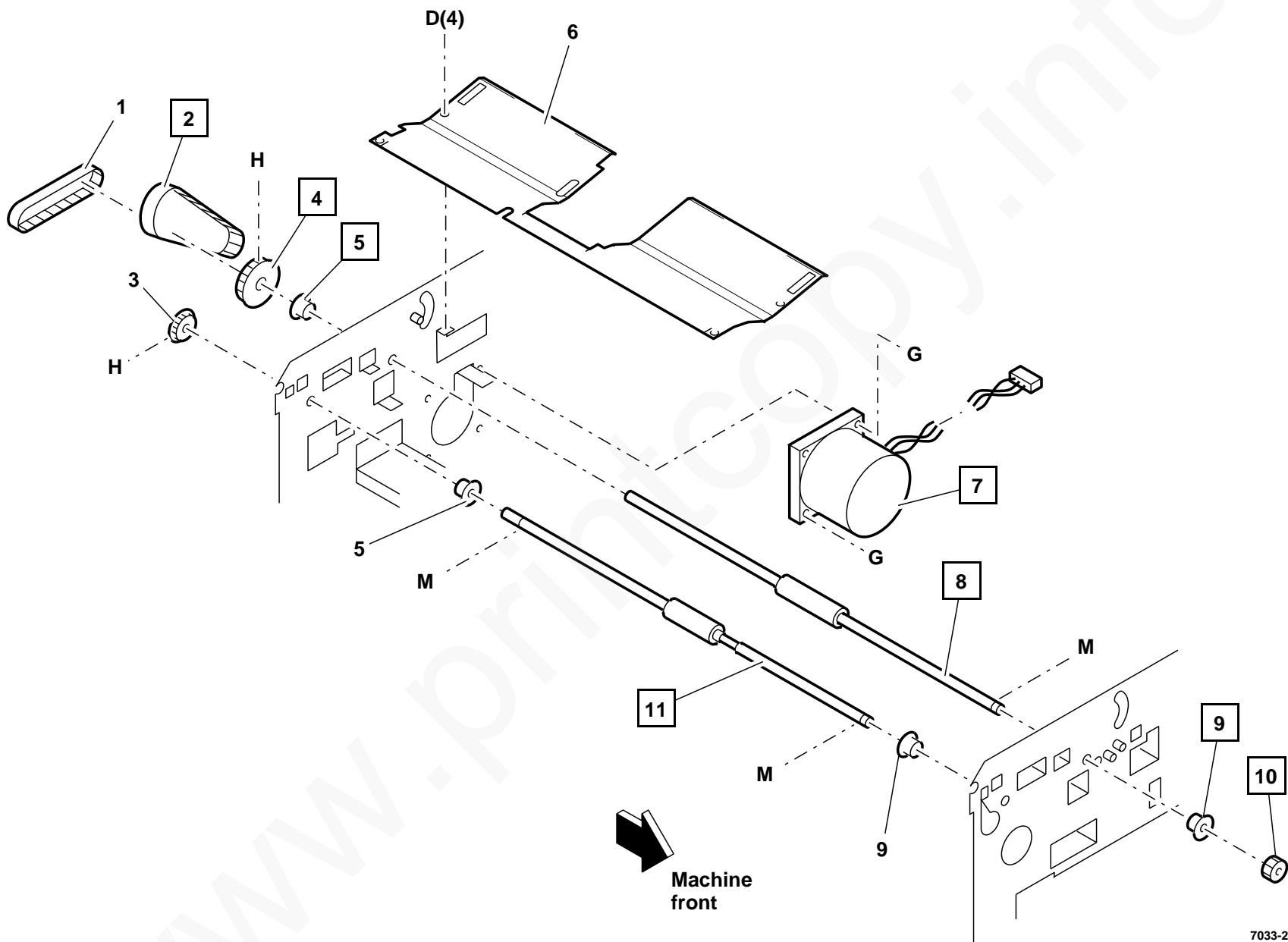
PL 5.5 Printer Output Assembly

Item	Part Number	Description
1	23E97330	Belt (150 MXL) P/O Tag 4
2	20E97290	Pulley (23T) P/O Tag 4
3	413W77559	Bearing
4	110K97320	Scan Interlock Switch
5	22K88130	Paper Output Roller #1
6	22K87760	Paper Output Roller #2
7	13E90840	Bearing
8	20E97270	Pulley (33T)
9	23E96930	Belt
10	13E98370	Bearing
11	9E88050	Tension Spring
12	54K97042	Paper Chute Assembly, Lower

Machine front
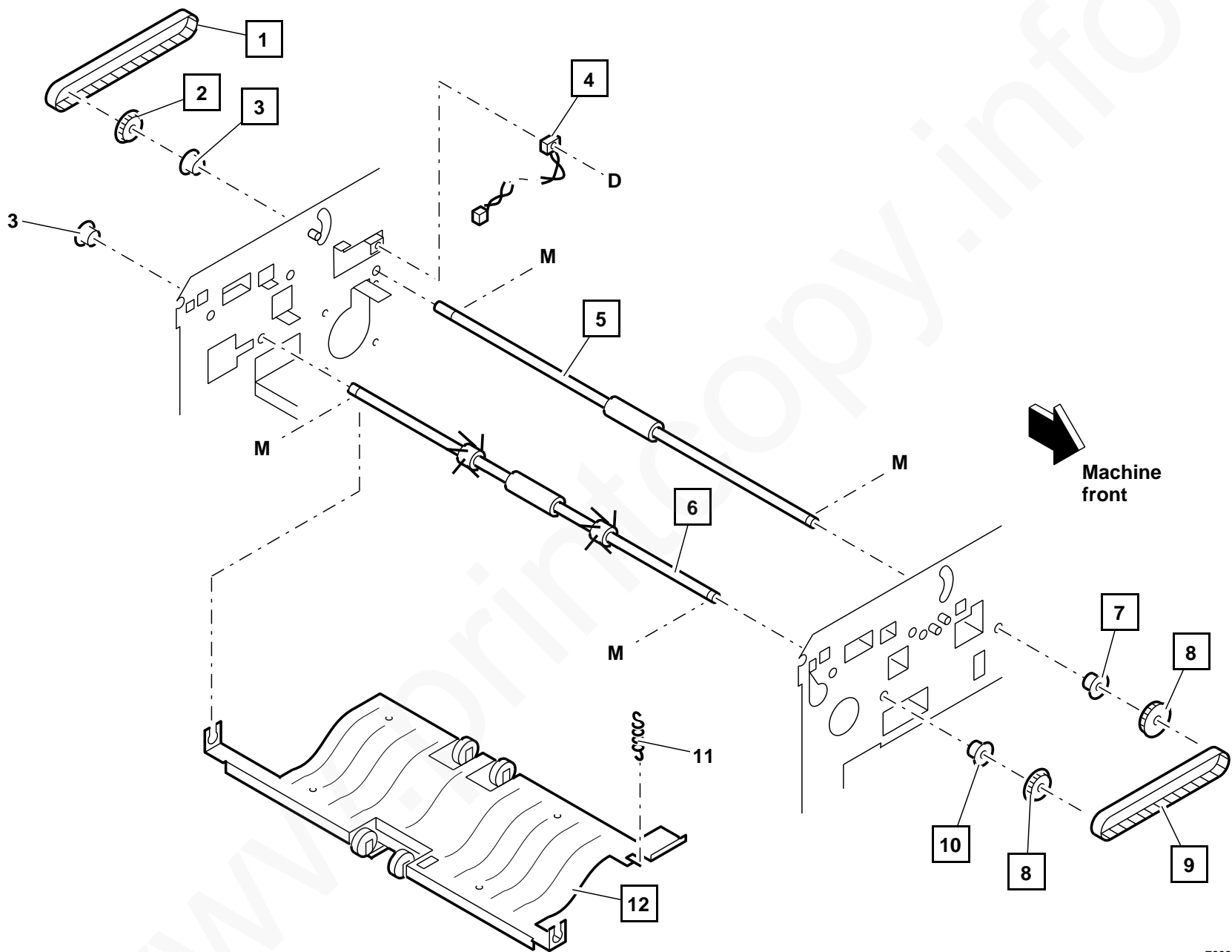
7033-207

PL 5.6A Upper Printer

Item	Part Number	Description
1	23E96920	Drive Belt #1
2	20E96980	Pulley (67T)
3	13E97980	Bearing
4	22E98540	Hinge Shaft Core
5	9E8090	Rear Spring
6	13E97990	Hinge Shaft Bearing
7	20E96970	Pulley (22T)
8	6E87580	Printer Hinge Shaft
9	9E88080	Front Spring
10	6E87590	Stop Shaft
11	13E90840	Bearing
12	22K87771	Idler wheels
13	20P61497	Pulley (29T)
14	23E96890	Drive Belt #2
15	6E87570	Pressure Roller Idler Shaft

7033-208
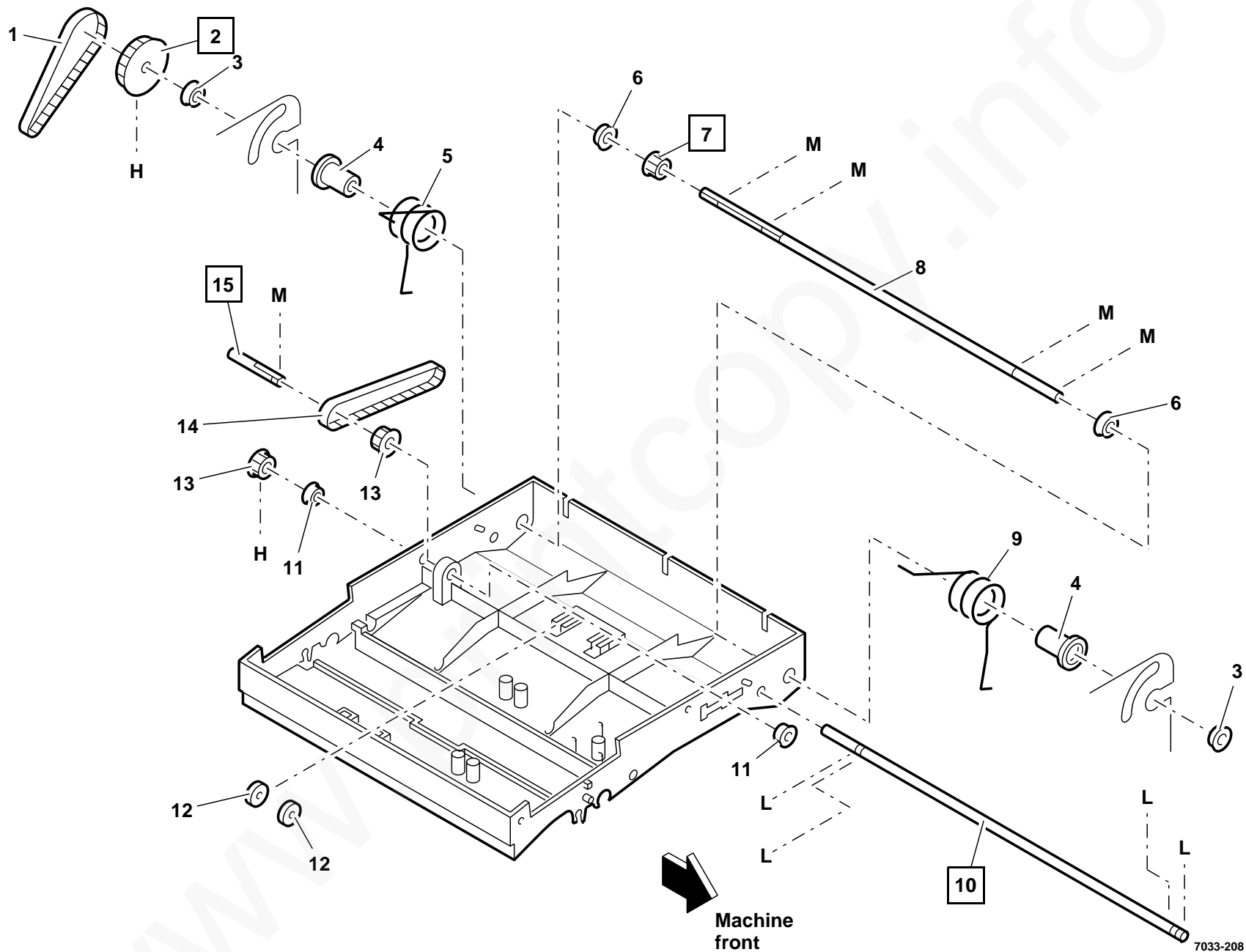
PL 5.6B Upper Printer

Item	Part Number	Description
1	23E96900	Belt
2	20P61497	Pulley (29T)
3	13P61476	Bearing
4	22K87780	Pressure Roller A4 (USO)
	22K87990	Pressure Roller B4 (RX)
5	3E85381	Release Latch (Rear)
6	1K87352	Frame
7	130K98110	Area #2 Jam Sensor
8	152K89584	Upper Printer Harness (USO) tag 5
	152K89574	Upper Printer Harness (RX) tag 5
9	130K98050	Donor Out Sensor PWB (USO)
	130K98040	Donor Out Sensor PWB (RX)
10	11E96821	Latch Lever
11	12E96350	Latch Linkage
12	3K96842	Release Latch Assembly
13	9E88070	Latch Spring
14	7E98910	Clutch/Gear (24T)
15	7P62464	Gear (24T)
16	7P61574	Gear (18T)
17	13E90840	Bearing
18	9E88062	Springs
19	6E87560	Idler Shaft
20	22E98550	Idler Roller
21	130E96060	Document Size Sensor
22	22K88110	Output Shaft

Machine front
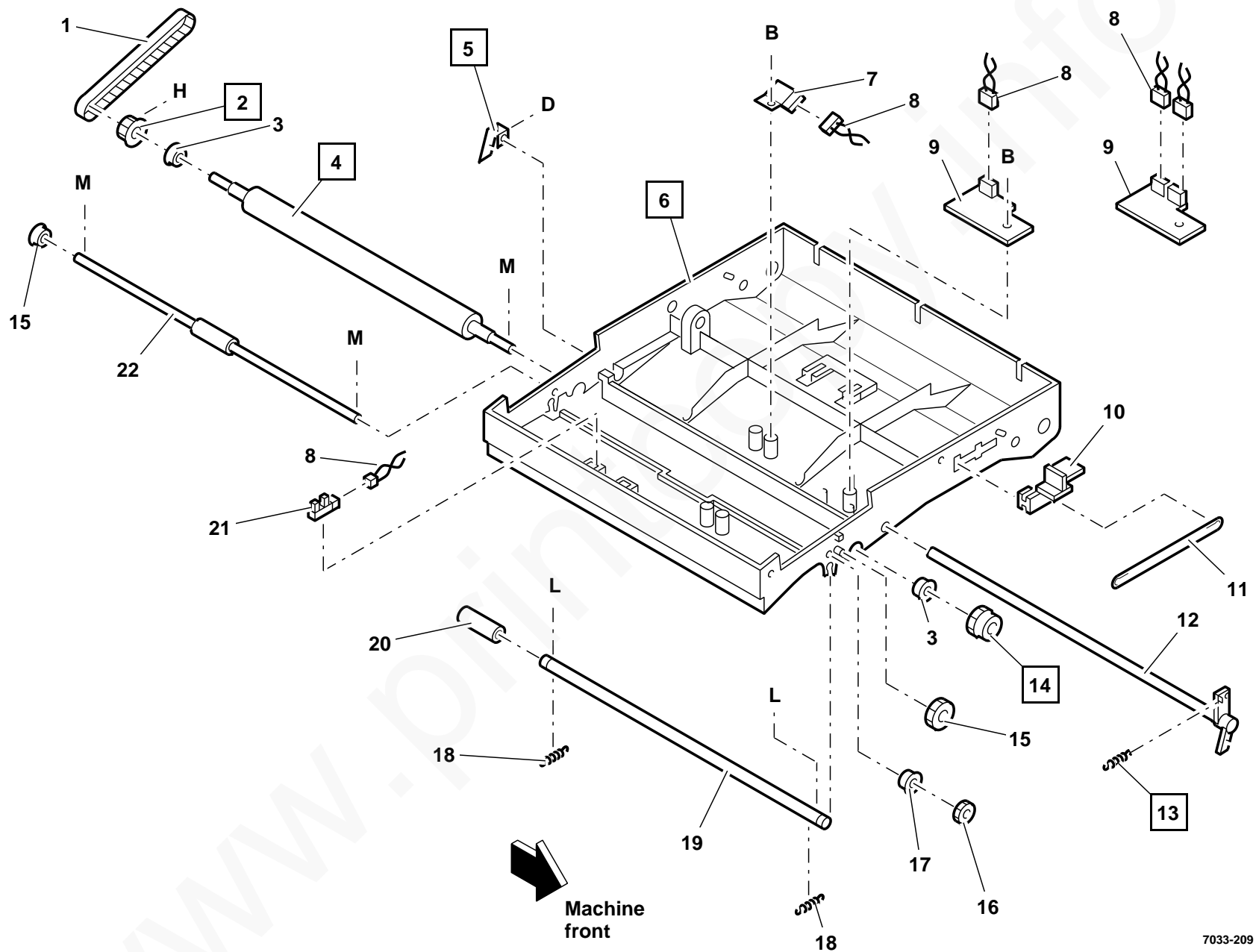
7033-209

PL 5.7A Lower Printer

Item	Part Number	Description
1	23E96910	Belt (160 MXL)
2	20E96990	Pulley
3	68E73810	Donor Film Support (left, rear)
4	68E73800	Donor Film Support (right, rear)
5	-----	Sensor Holder
6	110E96580	Low Paper Sensor
7	130K98011	Paper Out Sensor
8	30K99882	Donor Film Support Assembly (front)
9	11K95760	Linkage #2
10	11E96830	Linkage #1
11	-----	Shaft
12	130K97991	Thermal Head Assembly A4 (USO) Tag 2
	130K97980	Thermal Head Assembly B4 (RX) PreTag 2
	130K98860	Thermal Head Assembly B4 (RX) Tag 2
13	-----	Wire Harness
14	-----	Wire Harness
15	5K95651	Donor Film Drive Assembly
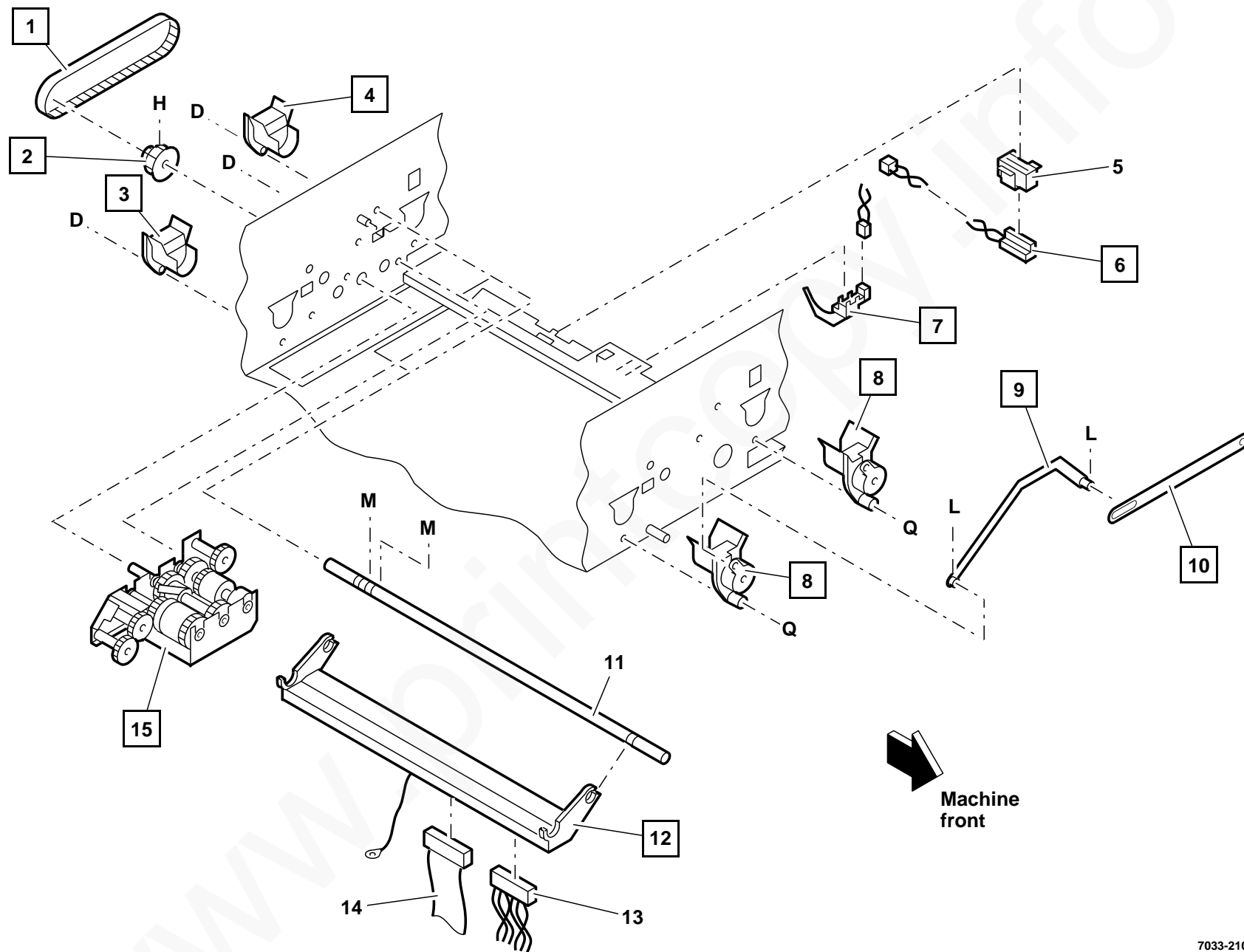
7033-210

PL 5.7B Lower Printer

Item	Part Number	Description
1	110K96950	Printer Interlock Switch
2	15E88630	Sensor Actuator
3	130E96060	Thermal Head Position Sensor
4	11E96721	Donor Film Indicator Linkage
5	18E95121	Donor Film Indicator
6	9E88040	Donor Film Indicator Linkage Spring
7	1E86200	Guide Block
8	5E97670	Pulley Support
9	23E96880	Belt (155 MXL)
10	20E96960	Pulley (62T)
11	15K98131	Lever
12	9P63168	Linkage Spring
13	11K95770	Thermal Head Lever Assembly
14	11E96750	Separator Shaft Lever
15	12E96340	Separator Shaft Lever Linkage
16	13E90840	Bearing
17	6K96191	Thermal Head Cam Shaft
18	6E88930	Separator Shaft

Machine front
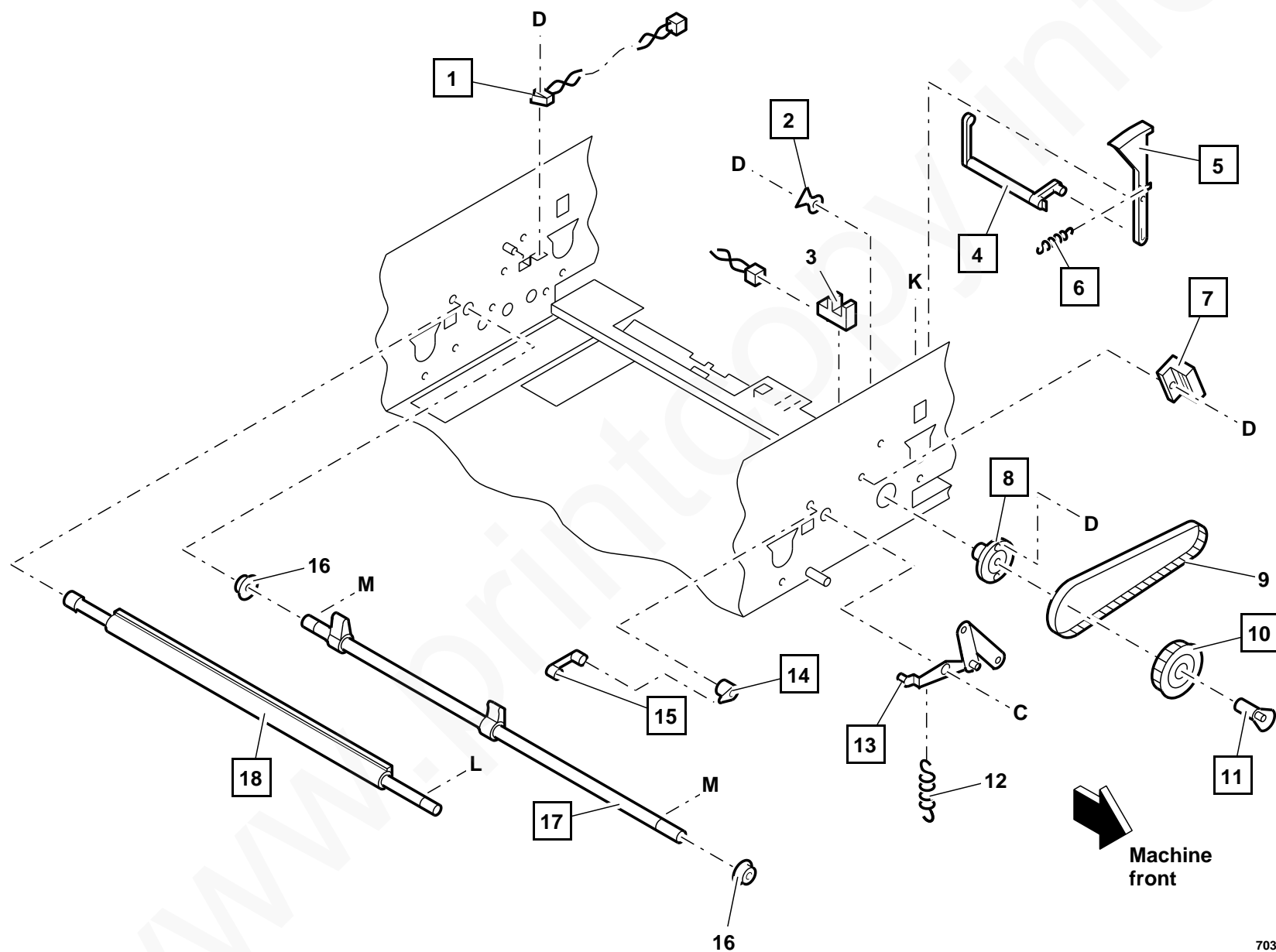
7033-213

PL 5.8 Paper Feed Assembly, Upper

Item	Part Number	Description
1	-----	Wire Harness
2	13E98010	Bearing
3	11E96840	Shaft Joint
4	54K97060	Paper Guide
5	110K90570	Right Cover Latch Switch
6	130K98000	Area #1 Jam Sensor
7	-----	Wire Harness
8	23E96960	Belt (80 MXL)
9	20E97020	Pulley (32T)
10	413W75959	Bearing
11	121E90450	Right Cover Latch
12	23E96950	Belt (71 MXL)
13	-----	Roller
14	22K88060	Paper Input Roller #1
15	22K88050	Paper Input Roller #2
16	127K98650	Paper Feed Motor
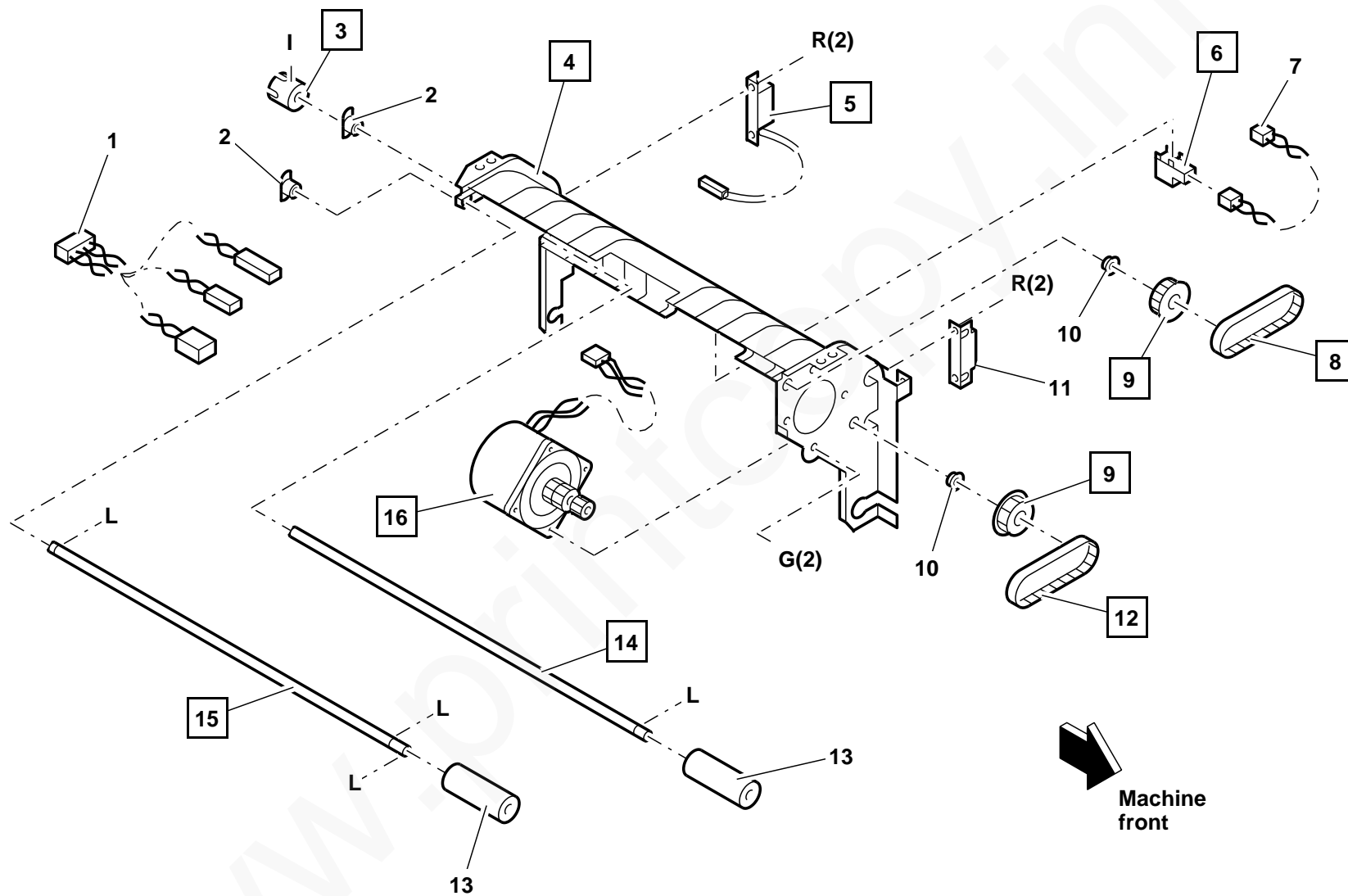
7033-211

PL 5.9 Paper Feed Assembly, Lower

Item	Part Number	Description
1	413W77559	Bearing
2	59K99540	Feed Shaft Roller
3	6K80380	Feed Shaft Assy
4	5K95660	Clutch/Spring Assembly
5	23E96980	Belt (112MXL)
6	121K97930	Paper Feed Solenoid
7	7K96160	Auxiliary Tray Drive Assembly
8	127K98660	Printer Motor
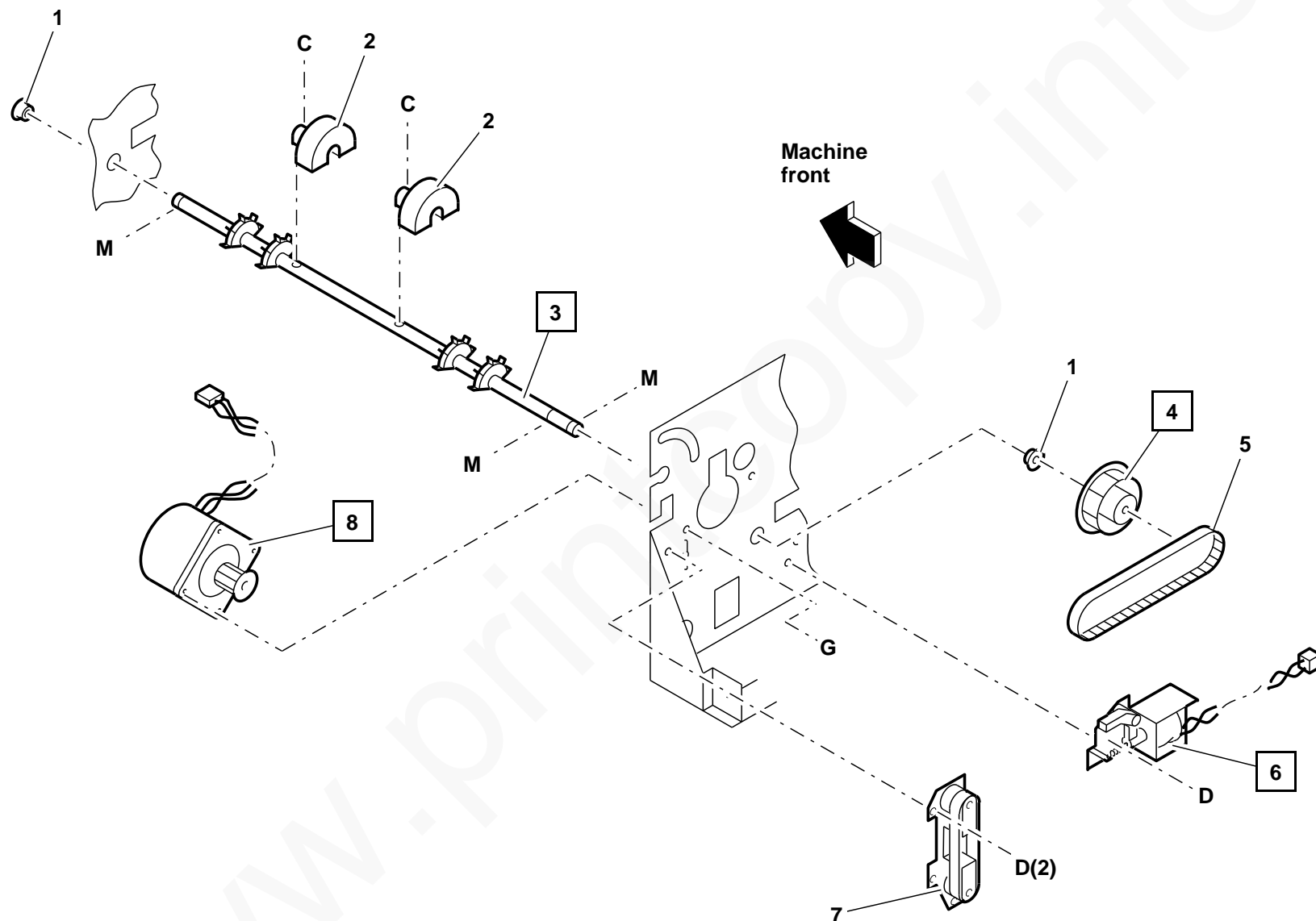
7033-212

PL 5.10 Electronics

Item	Part Number	Description
1	140K74872	Telephone Line Filter PWB (UK)
	140K74862	Telephone Line Filter PWB (EU)
2	-----	Grommet (RX/UK)
3	-----	Bracket
4	-----	Line Filter Harness (RX/UK)
5	140K73558	Autodialer PWB (RX) (Tag 46)
6	140K79770	14.4K bps Modem PWB (7033 and 7032 with 14.4K bps Option)
	140K76480	9600 bps Modem PWB (7032)
7	140K40880	G3 PWB (USO)(LA)(FC) (P/O Tag 15)
	140K73580	G3 PWB (RX) (Tag 12)
	140K73557	G3 PWB (RX) (Tag 4)
	140K73556	G3 PWB (RX) (Tag 48)
	140K73554	G3 PWB (RX) (Tag 50)
	140K40890	G3 PWB (RX) (Tag 15)
8	708W38801	Fuse 12A
9	-----	Wire Harness
10	105K97333	Power Supply (USO)
	105K97343	Power Supply (RX)
11	140K33572	RAM/ROM PWB (USO) (Tag 13)
	140K40840	RAM/ROM PWB (USO) (P/OTag 15)
	140K40841	RAM/ROM PWB (USO) (Tag 16)

Item	Part Number	Description
12	140K25302	7033 Main PWB (USO)
	140K25313	7033 Main PWB (RX)
	140K79176	7033 Main PWB (RX) (Tag 49)
	140K27070	7032 Main PWB (USO)
13	130K98060	Speaker
14	-----	EMI Shield
15	-----	Plastic Wire Guide
16	-----	Electrical Box
17	140K79270	Option Mother PWB
	140K30230	Option Mother PWB (Tag 7)
18	117E06260	Telephone Line Cord (USO)
	117K09830	Telephone Line Cord (UK)
19	117P80447	Power Cord (USO)
	152K92956	Power Cord (UK)
	152K92957	Power Cord (EU)

Not Shown

	92E86100	115 VAC Label
	92E86110	200-240 VAC Label
	600K26687	6.15 Upgrade Kit (USO)
	499K93461	Upgrade Kit (Tag 13) (RX)
	499K93462	Upgrade Kit (Tag 15) (RX)
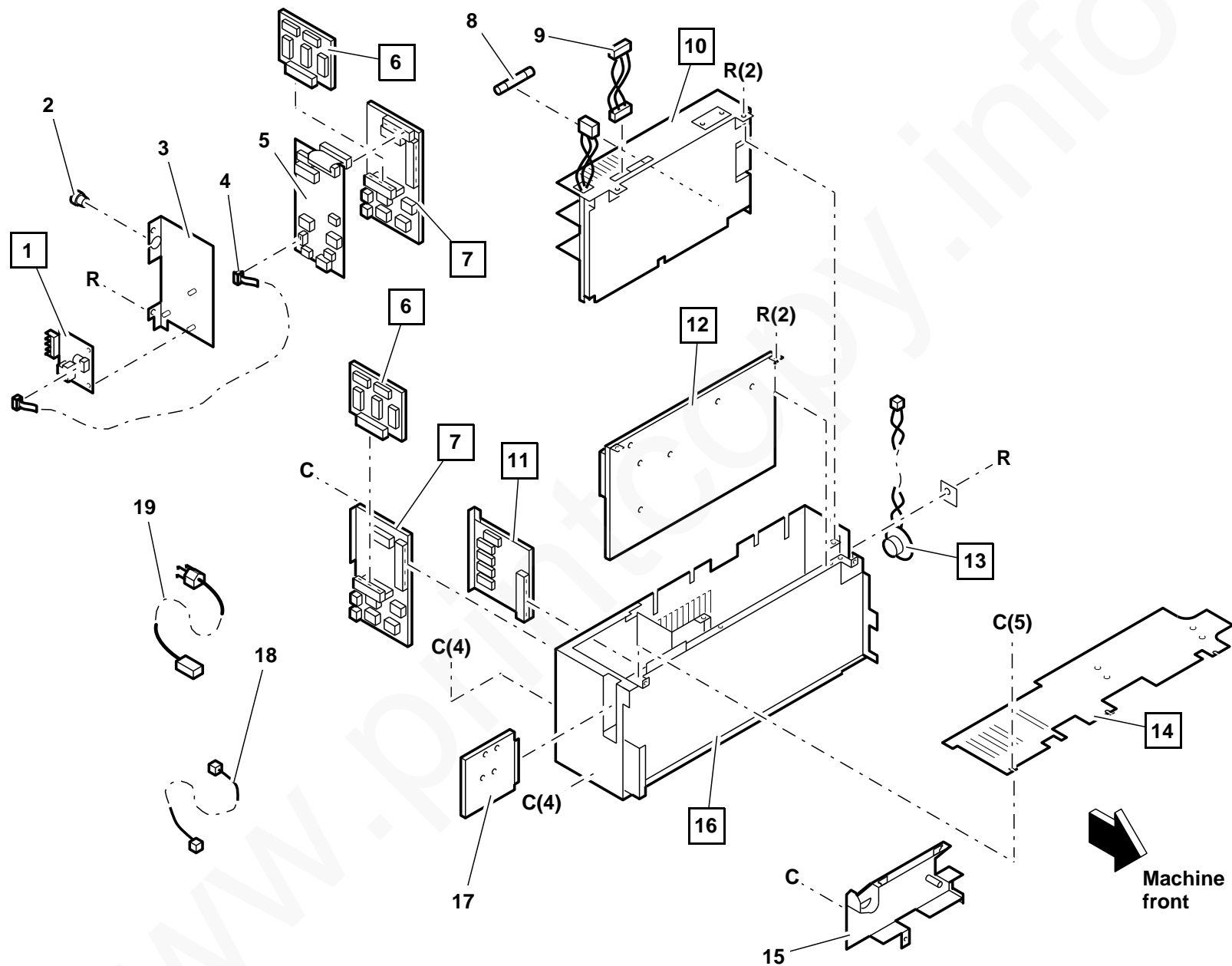
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Common Hardware

Item	Part Number	Description
A	13E90841	Bearing
B	26E86180	Screw (M3x10)
C	26E87840	Screw
D	26E98010	Screw (M3X6)
E	113W27651	Screw
F	113W28251	Screw
G	113W35857	Screw
H	138W35650	Set Screw
I	141W27551	Joint Set Screw
J	141W35451	Set Screw
K	354W21251	E-ring
L	354W24251	E-ring
M	354W27251	E-ring
N	413W77559	Bearing
O	354W15251	E-ring
P	153W28050	Screw
Q	26E89560	Screw
R	26E98021	Screw
S	354W10855	M-ring
T	112W35651	Screw (M4x6)
U	112W27651	Screw (M3x6)

Part Number Index

Part Number	PL Location	Part Number	PL Location
1E86162	5.1B	11E96750	5.7B
1E86200	5.7B	11E96821	5.6B
1K87352	5.6B	11E96830	5.7A
1K87753	5.1B	11E96840	5.8
3E85381	5.6B	11K95760	5.7A
3E86450	5.1B	11K95770	5.7B
3K96842	5.6B	12E96340	5.7B
5E97670	5.7B	12E96350	5.6B
5K95651	5.7A	13E90840	5.4B, 5.5, 5.6A, 5.6B, 5.7B
5K95660	5.9, 8.5A.2	13E97941	5.2A
6E87450	5.4A	13E97980	5.6A
6E87560	5.6B	13E97990	5.6A
6E87570	5.6A	13E98010	5.2A, 5.4A, 5.8, 8.5A.2
6E87580	5.6A	13E98370	5.5
6E87590	5.6A	13P61476	5.6B
6E88930	5.7B	15E88630	5.7B
6K80380	5.9, 8.1.4.2	15K98131	5.7B
6K96191	5.7B	17E95840	5.1A
6K96200	5.9, 8.5A.2	18E95100	5.1B
7E98870	5.3	18E95121	5.7B
7E98880	5.4B	20E96940	5.4B
7E98890	5.4A	20E96960	5.7B
7E98910	5.6B	20E96970	5.6A
7E99390	5.3, 5.4A	20E96980	5.6A
7K96160	5.9	20E96990	5.7A
7P61574	5.6B	20E97020	5.8
7P61817	5.4A	20E97030	8.5A.2
7P62464	5.6B	20E97040	8.5A.2
9E87862	5.3	20E97270	5.5
9E87870	5.2A	20E97290	5.5
9E87881	5.2A	20P61497	5.4B, 5.6A, 5.6B
9E88040	5.7B	20P61499	5.2B
9E88050	5.5	22E98540	5.6A
9E88062	5.6B	22E98550	5.6B
9E88070	5.6B	22K87760	5.5
9E88080	5.6A	22K87771	5.6A
9E88090	5.6A	22K87780	5.6B
9P63168	5.7B	22K87890	5.2B
11E96721	5.7B	22K87900	5.2B

Part Number	PL Location	Part Number	PL Location	Part Number	PL Location
22K87910	5.4B	48E96190	5.1A	110E96580	5.7A
22K87930	5.4B	48K96615	5.1A, 5.2A	110E96590	8.5A.1
22K87990	5.6B	48K96664	5.1A	110K90570	5.8
22K88020	5.9, 8.5A.2	48K96696	5.1A	110K96560	5.1B, 8.5A.1
22K88050	5.8	48K96763	5.1A	110K96660	5.1B
22K88060	5.8	48K96803	8.5A.1	110K96950	5.7B
22K88070	8.5A.2	48K96971	5.1A	110K96960	5.1B
22K88110	5.6B	48E99260	5.1A	110K97320	5.5
22K88130	5.5	50E96861	5.1B	117E06260	5.10
23E96050	5.3	50K97653	5.1B	117K09830	5.10
23E96850	5.2B	50K97756	5.1B, 8.5A.1	117P80447	5.10
23E96860	5.4B	50K97766	5.1B, 8.5A.1	121E90450	5.8
23E96870	5.4B	54K97042	5.5	121E97500	8.5B
23E96880	5.7B	54K97060	5.8	121K97911	5.2A
23E96890	5.6A	54K97561	5.4A	121K97930	5.9, 8.5A.2
23E96900	5.6B	59K99540	5.9, 8.1.4.2	127K98640	5.4B
23E96910	5.7A	62K96272	5.4A	127K98650	5.8
23E96920	5.6A	62K96282	5.4A	127K98660	5.9
23E96930	5.5	68E73681	5.4A	130E96060	5.6B, 5.7B
23E96950	5.8	68E73800	5.7A	130K95150	5.4A
23E96960	5.8	68E73810	5.7A	130K97980	5.7A
23E96980	5.9, 8.5A.2	68E73971	5.1A	130K97991	5.7A
23E97000	8.5A.2	91E77050	5.1B	130K98000	5.8
23E97330	5.5	91P66413	5.1A	130K98011	5.7A, 8.5A.1
23K95233	5.3	91P80361	5.1A	130K98040	5.6B
26P63695	5.1B	92E84260	5.1A	130K98050	5.6B
28E95810	8.5A.2	92E83420	5.1A	130K98060	5.10
30K86101	5.1A	92E86100	5.10	130K98080	5.4A
30K86111	5.1A	92E86110	5.10	130K98110	5.6B
30K99882	5.7A	92E86370	5.1A	130K98560	5.4A
38K97101	5.3	92E86383	5.1A	130K98860	5.7A
45E96413	5.1A	97K96150	5.7A	140K23630	8.5C
45K95080	5.1A	97K96160	5.7A	140K25302	5.10
45K95250	5.1A	97K96170	5.7A	140K25313	5.10
48E95551	5.1B	101K97606	5.1A	140K27070	5.10
48E95692	8.5A.1	101K97617	5.1A	140K27081	5.10
48E95721	8.5A.1	101K97912	5.1A	140K28603	5.10
48E95753	5.1A	101K98671	5.1A	140K28604	5.10
48E95771	5.1A	105K97333	5.10	140K30230	5.10
48E95901	5.1A	105K97343	5.10	140K32672	5.10
48E95984	5.1A	105K97490	8.5B		

Common Hardware, Part Number Index

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Part Number	PL Location	Part Number	PL Location
140K32680	5.10	152K92956	5.10
140K33571	5.10	152K92957	5.10
140K33572	5.10	413W75959	5.8, 8.5A.2
140K33580	5.10	413W77559	5.4B, 5.5, 5.9, 8.5A.2
140K40840	5.10	499K93461	5.10
140K40850	5.10	499K93462	5.10
140K40860	5.10	600K26681	5.10
140K40870	5.10	600K26682	5.10
140K40880	5.10	600K26683	5.10
140K40890	5.10	600K26684	5.10
140K40900	8.5C	708W38801	5.10
140K42600	5.10		
140K42601	5.10		
140K73507	5.10		
140K73509	5.10		
140K73519	5.10		
140K73539	5.10		
140K73554	5.10		
140K73556	5.10		
140K73557	5.10		
140K73558	5.10		
140K73581	8.5C		
140K73591	8.5C		
140K73605	8.5B		
140K73936	5.10		
140K73937	5.10		
140K73938	5.10		
140K74862	5.10		
140K74872	5.10		
140K76480	5.10		
140K79270	5.10		
140K79176	5.10		
140K79770	5.10		
152K34610	8.5C		
152K34620	8.5C		
152K75541	8.5B		
152K89461	5.1A		
152K89574	5.6A		
152K89584	5.6A		

6. General Procedures / Information

6. General Procedures/Information

Section Contents

Introduction

The following is a description of the information contained within this section of the service manual.

The General Procedures subsection contains information relating to setting up the G3 PWB and the paper tray.

All of the available diagnostic procedures are described in 6.2.

When a problem exists in a terminal that could be caused by conditions outside of the defined specifications, refer to Product Specifications. If the problem is a result of space, electrical, or environmental problems, call for assistance.

The Tools and Supplies subsection contains a listing of the required tools and supplies needed to properly repair and maintain the terminal.

The Installation subsection provides the procedures required to install and verify basic operation of the terminal. The procedure for repacking the terminal for shipment is also provided.

The General Information subsection contains requirements for telephones and interconnections. Refer to Telephone Requirements whenever the problem is a result of the telephone or telephone connections. This section also contains precautions concerning electrostatic discharge and a Glossary of Mnemonics.

As changes in configuration are made to the terminal, they are assigned a Tag/MOD number. Information about a specific modification can be found in the Tag/MOD Index within the Change Tag/MOD Information subsection. This section also contains terminal configuration information in Assembly and Firmware Matrix.

6.1 General Procedures

6.1.1 G3 PWB Setup (USO)

Figure 1 illustrates the jumper locations on the USO G3 PWB. Parameters for the jumpers are listed in Table 1.
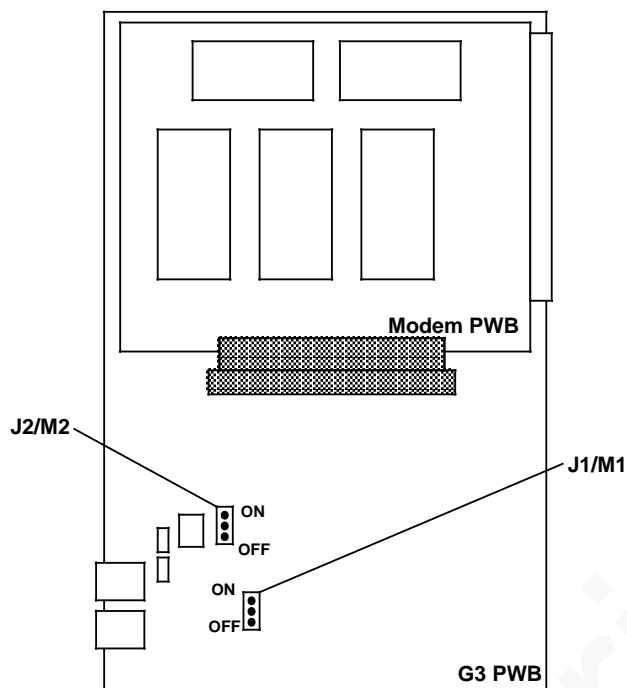
Figure 1. G3 PWB Jumper Location (USO)

Table 1. G3 Jumpers

Jumper	Setting	Description
J2/M2	ON * OFF	Ring sensitivity at 40 VRMS Ring sensitivity at 10 VRMS
J1/M1	ON OFF *	When shorted, the terminal is able to switch on key station lamps. (Indicating line in use. "A" line shorted "A" line open

*   Indicates factory setting (default).

6.1.2 G3/Coupler PWB Setup (RX)

Figure 2 illustrates the switch and link locations on the RX coupler PWB. Parameters for the links are listed in Table 1 and switches are listed in Table 2.
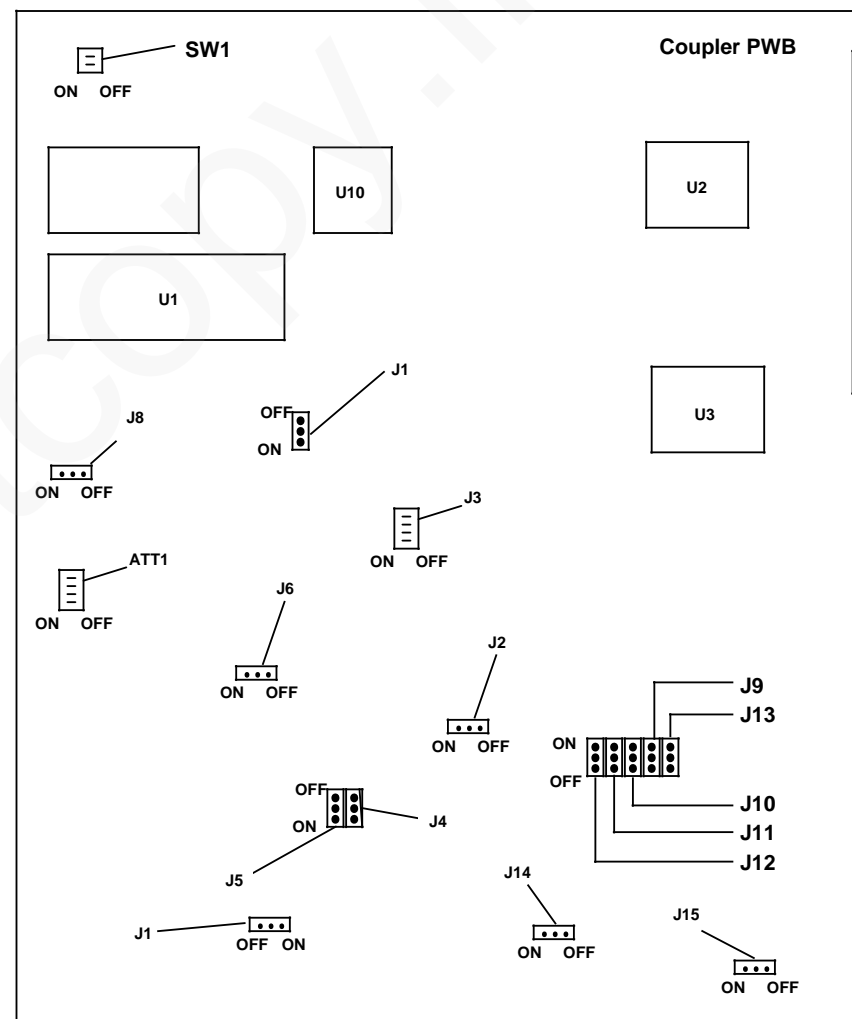
Figure 2. Coupler PWB Switch and Link Locations (RX)

Table 1. RX Coupler PWB Jumpers

Link	Setting	Description
J1	ON * OFF	Line hold resistance of 115 ohms Line current limiting circuit selected
J2, J3	**J2** **J3** * OFF OFF* OFF ON ON OFF ON ON	4 wire configuration N/A N/A 3 wire configuration
J4, J5	**J4** **J5** OFF OFF ON OFF OFF ON * ON ON *	Ring sensitivity at 6 VRMS Ring sensitivity at 11 VRMS Ring sensitivity at 16 VRMS Ring sensitivity at 21 VRMS
J6	ON OFF *	Ring detect capacitance of 1 uF Ring detect capacitance of 0.5 uF
J7	ON * OFF	Provides 0.5 dB attenuation for transmit level Provides 0 dB gain
J8	ON OFF *	Additional 4 dB attenuation for receive signal Provides 0 dB attenuation
J9, J10, and J11	**J9** **J10** **J11** OFF OFF OFF OFF OFF ON OFF ON OFF OFF ON ON * ON OFF OFF* ON OFF ON ON ON OFF ON ON ON	Resistance value of pulsed dial high voltage limitation circuit: open circuit 100 ohms 200 ohms 67 ohms 600 ohms 86 ohms 150 ohms 60 ohms

*   Indicates factory setting (default).

Table 1. RX Coupler PWB Jumpers (continued)

Link	Setting	Description
J12	ON OFF *	Selection of VR1 for pulsed dial high voltage limitation circuit
J13, J14, and J15	**J13** **J14** **J15** OFF OFF OFF OFF ON OFF * ON OFF OFF* ON OFF ON ON ON ON	Capacitance value of pulsed dial high voltage limitation circuit: open circuit 0.5 uF 1 uF 2 uF 0 uF

*   Indicates factory setting (default).

Table 2. RX Coupler PWB Switches

Switch	Description
ATT1	Transmit power level Marking: 1 2 4 8 Description: −1 dBm −2 dBm −4 dBm −8 dBm Default Setting: ON OFF OFF ON ***NOTE:*** ***For transmit voltage measurements and settings refer to Section 4 page 4-48.***

SW1	Bit1 - Service mode
	    OFF=SR mode disabled, ON=SR mode enabled
	    Default setting: OFF
	Bit2 - Remote diagnostics
	    OFF=Remote diagnostics disabled, ON= Remote diagnostics enabled
	    Default setting: OFF

Table 2 G3/Coupler Switch and Link Positions

Jumper	Australia	Belgium	Denmark	Finland	Greece	Holland
J1	ON	ON	ON	ON	ON	ON
J2	OFF	OFF	OFF	OFF	OFF	OFF
J3	OFF	OFF	OFF	OFF	OFF	OFF
J4	ON	OFF	OFF	ON	ON	ON
J5	ON	OFF	ON	ON	ON	ON
J6	OFF	OFF	OFF	OFF	OFF	OFF
J7	ON	OFF	OFF	ON	ON	OFF
J8	OFF	OFF	ON	OFF	OFF	ON
J9	ON	ON	ON	ON	ON	ON
J10	OFF	OFF	OFF	OFF	OFF	OFF
J11	OFF	OFF	OFF	OFF	OFF	OFF
J12	OFF	OFF	ON	OFF	OFF	ON
J13	ON	ON	OFF	ON	ON	OFF
J14	OFF	OFF	ON	OFF	OFF	OFF
J15	OFF	OFF	OFF	OFF	OFF	OFF
ATT1	- 10 dBm OFF / ON / OFF / ON	- 7dBm ON / ON / ON / OFF	-10 dBm OFF / ON / OFF / ON	- 9 dBm ON / OFF / OFF / ON	- 9dBm ON / OFF / OFF / ON	- 7dBm ON / ON / ON / OFF
SW1	ON/OFF	OFF/OFF	ON/OFF	OFF/ON	ON/OFF	OFF / ON

Table 2 G3/Coupler Switch and Link Positions

Jumper	Italy	Norway	Spain	Sweden	U.K.	
J1	ON	ON	ON	ON	ON	
J2	OFF	OFF	OFF	OFF	OFF	
J3	OFF	OFF	OFF	OFF	OFF	
J4	ON	OFF	ON	ON	ON	
J5	ON	ON	ON	ON	ON	
J6	OFF	OFF	ON	OFF	OFF	
J7	ON	OFF	ON	OFF	ON	
J8	OFF	ON	ON	OFF	OFF	
J9	ON	ON	ON	ON	ON	
J10	OFF	OFF	OFF	OFF	OFF	
J11	OFF	OFF	OFF	OFF	OFF	
J12	OFF	OFF	ON	OFF	OFF	
J13	ON	ON	ON	ON	ON	
J14	OFF	OFF	OFF	OFF	OFF	
J15	OFF	OFF	OFF	OFF	OFF	
ATT1	- 9 dBm ON / OFF / OFF / ON	- 10 dBm OFF / ON / OFF / ON	- 8 dBm OFF / OFF / OFF / ON	- 5dBm ON / OFF / ON / OFF	- 9dBm ON / OFF / OFF / ON	
SW1	OFF / OFF	OFF/OFF	OFF / ON	OFF/OFF	OFF/OFF	

6.1.3 Paper Tray Setup

USO

The paper size sensor in the paper tray and auxiliary tray (Figure 1) is actuated by the position of the button and actuator tab on the paper tray. The button is always in the #3 position. Movement of the paper length block shifts the position of the actuator tab in the #1 position.

NOTE: Position #4 in the paper size sensor is not used to sense paper size. This portion of the sensor is shorted closed (low) and is used by the terminal circuitry to indicate that an auxiliary tray option is installed.

Table 1. Paper Sensor

Paper size	Sensor actuated
8 x 11	3
8 x 14	1 and 3
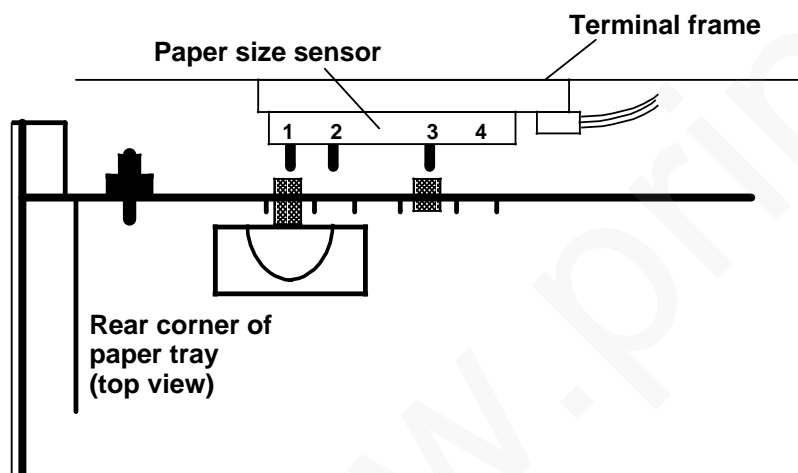
Figure 1. Paper Sensor Actuators (USO)

RX

The paper size sensor in the paper tray and auxiliary tray (Figure 2) is actuated by the position of the button and actuator tab on the paper width guide. The button is always in the #2 position. Movement of the paper width guide shifts the position of the actuator tab in the #3 position.

NOTE: Position #4 in the paper size sensor is not used to sense paper size. This portion of the sensor is shorted (low) and is used by the terminal circuitry to determine when an auxiliary tray option is installed.

Table 2. Paper Sensor

Paper size	Sensor actuated
A4	2
B4	2 and 3
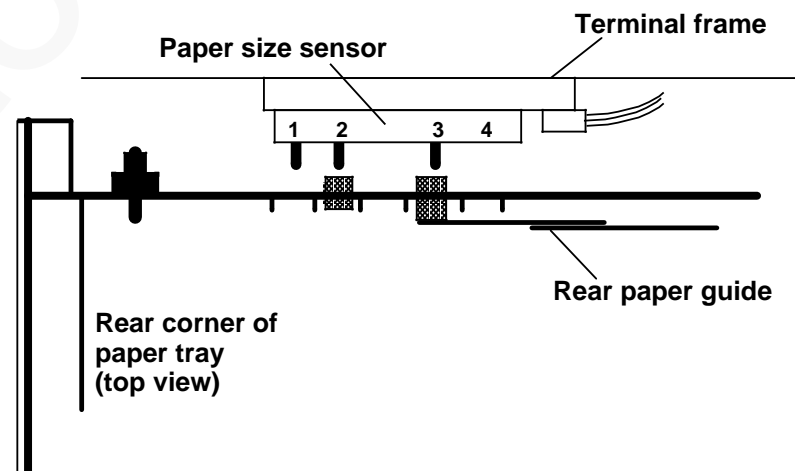
Figure 2. Paper Sensor Actuators (RX)

6.1.4 RAM/ROM PWB Setup

Dual access:

When replacing the RAM/ROM PWB in a 7032base terminal, soft switch 219 bit ("0") must be set to OFF ("0"). For 7032 terminals with expanded memory and all 7033 terminals, the soft switch should be set to ON ("1").

Tag 4 IDF savings

When replacing the RAM/ROM PWB in a 7032/7033 terminal with tag 4, soft switch 051 bit ("0") must be set to ON ("1"). For pre-tag 4 terminals, bit ("0") must be set to OFF ("0").

6.2 Diagnostic Procedures

This section of the manual contains general test procedures contained within the software of the terminal. To ensure accurate testing and prevent loss of system data, read each procedure carefully.

6.2.1 Service Mode

NOTE: Each time power is removed, service mode must be entered again.

USO: To enter service mode

1. Press Exit.

2. Press * on the keypad three times.

3. Press Stop.

4. If the terminal is in secure mode, repeat steps 1, 2, and 3.

    The top row of the display flashes when the terminal is in service mode.

    To exit service mode

1. Press Exit.

2. Press * on the keypad three times.

3. Press Stop.

RX: To enter service mode

1. Remove power cord.

2. Remove the PWB access cover.

3. On the coupler PWB, position SW1 to ON.

4. Reinstall the power cord.

    The top row of the display flashes when the terminal is in service mode.

    To exit service mode

1. Remove power cord.

2. On the coupler PWB, position SW1 to OFF.

3. Reinstall the PWB access cover.

4. Reinstall the power cord.

6.2.2 Auto Diagnostics (Self Test)

This test completes a series of diagnostic routines throughout the terminal in order to isolate a faulty assembly. The test can be performed in the normal operating mode or the service mode.

1. Open the flip panel.

2. Press Diagnostics. The display will indicate:

```
TEST> SELF TEST, REMOTE TEST ENABLE
PRESS [SELECT] THEN [ENTER] OR [EXIT]
```

SELF TEST should be flashing.

3. Press Enter.

    a. The display will fill with characters, then solid blocks, then control panel LEDs are tested.

    b. During the remainder of the test (approximately 40 seconds), the display indicates:

```
            SELF TEST
            RUNNING
```

4. If an error code is displayed, record the code, then press Start to continue the test.

5. At the end of the self test, a tone will sound and a test pattern will print. The display will indicate:

```
        REPORT PRINTING
```

The terminal will return to the idle mode.

6.2.3 Remote Diagnostics

Purpose

The function of remote diagnostics is to allow a central test terminal to control specified functions in a remote customer terminal.

Customer terminal configurations

USO: This feature is incorporated in all production terminals and can be set from the control panel by the operator to an OFF or ON status. Production terminals will have Remote Test Enable (Diagnostics) turned ON when shipped.

RX: This feature is incorporated in all production terminals and is controlled by a DIP switch bit mounted on the G3 PWB (refer to 6.1.1). Production terminals will have Remote Test Enable (Diagnostics and the DIP switch bit) turned OFF when shipped.

Operation

The central test terminal is able to initiate individual tests that do not require direct observation of terminal functions.

Soft Switch 090 bit "0" must be set to "1" for the central test terminal to perform the remote diagnostic test.

00000001 = ON

00000000 = OFF

6.2.4 Service Mode Tests

The following diagnostic routines are included in service tests. All of these tests are described in this section, except where noted.

Test #	Description
01	Test Pattern Type A
02	Test Pattern Type B
03	Test Pattern Type C
04	Service Mode Options Report (refer to 6.2.5)
05	Protocol Monitor Print
06	Interface Trace Print
07	Memory Dump Printout
08	Service Mode Diagnostics (refer to 6.2.6)
09	Reserved
10	Soft Switch Set Up (refer to Appendix A)
11	Reserved
12	Reset Counters
13	RAM Clear
14	Original Feed Test
15	LED Array Test
16	Sensor Test
17	Frequency Test
18	Touch Tone Test (DTMF generator)
19	Reserved
20	Hard Drive Exerciser Test
21	Reserved
22	RS-232 Loopback Test

Test 01, Test Pattern Type A

Internally generated test pattern. This is the same test pattern that is printed at the end of self test.

1. Enter service mode.

2. Select Test 01.

    a. Press 0 and 1 on the keypad, then press Enter. The display will indicate:

```
 01 PATTERN-A     PAGES >01
PRESS [START] OR [STOP]
```

    b. Using the keypad, enter the desired number to print.

    c. Press Start. The display will indicate:

```
 01 PATTERN-A      PRINTING
   PRESS [STOP] TO END
```

When printing is complete, the terminal will return to the idle mode.

Test 02, Test Pattern Type B

This pattern checks for waste in the donor film mechanical system and alignment of the thermal head mechanical system.

1. Enter service mode.

2. Select Test 02.

   a. Press 0 and 2 on the keypad, then press Enter. The display will indicate:

   ```
   02 PATTERN-B    PAGES >01
   PRESS [START] OR [STOP]
   ```

   b. Using the keypad, enter the desired number to print.

   c. Press Start. The display will indicate:

   ```
   02 PATTERN-B    PRINTING
   PRESS [STOP] TO END
   ```

When printing is complete, the terminal will return to the idle mode.

Test 03, Test Pattern Type C

This is a printout of the character generator.

1. Enter service mode.

2. Select Test 03.

   a. Press 0 and 3 on the keypad, then press Enter. The display will indicate:

   ```
   03 PATTERN-C    PAGES >01
   PRESS [START] OR [STOP]
   ```

   b. Using the keypad, enter the desired number to print.

   c. Press Start. The display will indicate:

   ```
   03 PATTERN-C    PRINTING
   PRESS [STOP] TO END
   ```

When printing is complete, the terminal will return to the idle mode.

Test 05, Protocol Monitor Print

Enables monitoring and printing of the facsimile protocol sequence of the last facsimile transaction. The method of printing is selected via Soft Switch Set Up.

1. Enter service mode.

2. Press 0 and 5 on the keypad, then press Enter. The display will indicate:

   ```
   05 PROTOCOL MONITOR PRINT
   PRESS [START] OR [STOP]
   ```

3. Press Start. The display will indicate:

   ```
   05 PROTOCOL MONITOR PRINTING
   PRESS [STOP] TO END
   ```

When printing is complete, the terminal will return to idle mode.
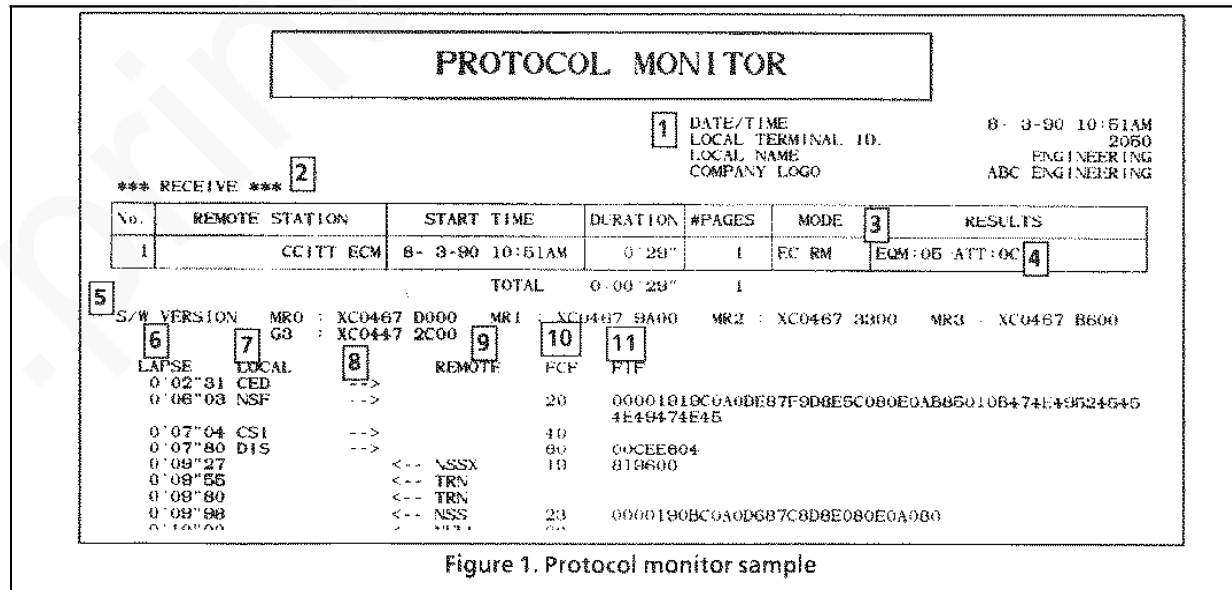
Figure 1. Protocol monitor sample

Protocol Monitor Print (continued)

4. Protocol monitor sample legend. (See Figure 1.)

   1. Header Print:
      Same header printed on Activity Report and Options Report.

   2. Activity Log Field:
      Same log printed on Activity Report.

   3. EQM (Eye Quality Monitor):
      A hex value printed in the activity log field that indicates the quality of the line. Values are shown below.

      Line Quality

Best	Worst	Line disconnected
00 . . . . 7F		FF

   4. Att (Attenuation):
      Also printed in the activity log field of the Activity Report when the terminal is in service mode. The printed value in hex indicates the received signal level in dbm's. Values are shown in Table 1.

   5. S/W Version:
      Prints the firmware version levels for the RAM/ROM and G3 PWB's. This information is also printed on the Options Report when the terminal is in service mode.

   6. Lapse:
      The lapse time in minutes and seconds for the operation.

   7. Local:
      The mnemonics listing of all signals sent by the local terminal.

   8. >
      Shows signal flow direction to and from the local to remote terminal.

   9. Remote:
      The mnemonic listing of all signals sent by the remote terminal.

   10. FCF (Facsimile Control Field) Engineering use only.

   11. FIF (Facsimile Information Field) Engineering use only.

Table 1. Attenuation

Hex Value	Signal Level (dBm)	Hex Value	Signal Level (dBm)
00	0	19	-25
01	-1	1A	-26
02	-2	1B	-27
03	-3	1C	-28
04	-4	1D	-29
05	-5	1E	-30
06	-6	1F	-31
07	-7	20	-32
08	-8	21	-33
09	-9	22	-34
0A	-10	23	-35
0B	-11	24	-36
0C	-12	25	-37
0D	-13	26	-38
0E	-14	27	-39
0F	-15	28	-40
10	-16	29	-41
11	-17	2A	-42
12	-18	2B	-43
13	-19	2C	-44
14	-20	2D	-45
15	-21	2E	-46
16	-22	2F	-47
17	-23	30	-48 or less
18	-24		

Test 06, Interface Trace Print

(Engineering Use Only)

This test provides a printout of a CPU trace.

1. Enter service mode.

2. Press 0 and 6 on the keypad, then press Enter. The display will indicate:

```
   06 INTERFACE TRACE PRINT
   PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
   06 INTERFACE TRACE PRINTING
        PRESS [STOP] TO END
```

When printing is complete, the terminal will return to idle mode.

Test 07, Memory Dump Printout

(Engineering Use Only)

This test provides a printout of the memory contents in the S-RAM and D-RAM.

1. Enter service mode.

2. Press 0 and 7 on the keypad, then press Enter. The display will indicate:

```
   07 MEMORY DUMP PRINT
   PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
     ADDRESS > _        SIZE >
ENTER ADDRESS THEN PRESS [ENTER]
```

4. Enter the memory location.

    a. 700000 (S-RAM), or
        800000 (D-RAM), or
        900000 (1 or 3 megabyte memory
        expansion)

    b. Press Enter. The display will indicate:

```
ADDRESS > XXXXXX        SIZE > BYTE
  PRESS [SELECT] TO CHANGE SIZE
```

5. Select the printout format.

    a. Press Select to choose BYTE, WORD, or
        LONG.
        BYTE= columns of two characters
        WORD= columns of four characters
        LONG= columns of eight characters

Test 07, Memory Dump Printout (continued)

6. Press Start. The display will indicate:

```
   07 MEMORY DUMP PRINTING
      PRESS [STOP] TO END
```

When printing is complete, the terminal will return to idle mode.

Test 07, Service Mode Diagnostics

Refer to 6.2.6

Test 10, Softswitch Setup

Refer to Appendix A, A1

Test 12, Reset Counters

This test allows all of the operation and malfunction counters listed on the options report to be reset.

1. Enter service mode.

2. Press 1 and 2 on the keypad, then press Enter. The display will indicate:

```
12 RESET COUNTERS
PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
COUNTERS > ALL, OPERATION, MALFUNCTION
PRESS [SELECT] THEN [ENTER] OR [EXIT]
```

4. Select the counters to clear.

   a. Press Select to choose ALL, OPERATION, or MALFUNCTION.
   ALL = reset all counters
   OPERATION = reset only operation counters
   MALFUNCTION = reset only malfunction counters

   b. Press Enter. The display will indicate:

```
COUNTERS > ALL, OPERATION, MALFUNCTION
COMPLETE
```

The terminal will return to the idle mode.

Test 13, RAM Clear

This test allows RAM to be cleared. System data will be set to the assigned defaults and all memory (RAM) will be cleared.

1. Enter service mode.

2. Press 1 and 3 on the keypad, then press Enter. The display will indicate:

```
13 RAM CLEAR
PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
CAUTION: THIS WILL CLEAR ALL SYSTEM DATA
PRESS [START] OR [STOP]
```

4. Press Start. The display will indicate:

```
13 RAM CLEAR > PROGRAM, ALL
PRESS [SELECT] THEN [ENTER] OR [EXIT]
```

5. Select the RAM to be cleared.

   a. Press Select to choose PROGRAM or ALL.
   PROGRAM = clears all system data except customer data, and reset default settings
   ALL = clears all system data including customer data, and reset default settings

   NOTE: After a program of all RAM clear, check soft switch settings for proper operation based on machine configuration (7032 vs 7033) and tags. If soft switches were changed to address operational or network performance, Those switches must be reset.

   b. Press Enter.

The terminal will reset, then the display will indicate:

```
         LOAD ORIGINALS FACE DOWN
TIME     ENTER TERMINAL ID/NAME      DATE
```

Test 14, Original Feed Test

This test is an exerciser for the automatic document feeder and scan feed rollers.

1. Enter service mode.

2. Press 1 and 4 on the keypad, then press Enter. The display will indicate:

```
     14 ORIGINAL FEED TEST
     PRESS [START] OR [STOP]
```

3. Load originals in the ADF.

4. Press Start. Documents will begin feeding. The display will indicate:

```
    14 ORIGINAL FEED TEST  #NN
          PRESS [STOP] TO END
```

NOTE: #NN is the page count of the documents already fed.

5. After all documents have been fed, press Stop.

The test will stop, and the terminal will return to idle mode.

Test 15, LED Array Test

This test verifies proper operation of LEDs in the video assembly.

1. Enter service mode.

2. Press 1 and 5 on the keypad, then press Enter. The display will indicate:

```
       15 LED ARRAY TEST
     PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
       15 LED ARRAY TEST
      PRESS [STOP] TO END
```

4. Open the scanner. Verify that all LEDs are illuminated. Close the scanner.

5. Press Stop.

The test will stop, and the terminal will return to the idle mode.

Test 16, Sensor Test

This test displays the state (high or low) of each sensor and switch in the terminal. Each sensor may be actuated or deactuated and the state change will be displayed.

1. Enter service mode.

2. Press 1 and 6 on the keypad, then press Enter. The display will indicate:

```
       16 SENSOR TEST
     PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate the first series of sensors and switches:

```
1 DOC SCP DS1 DS2 SCI
   L   L   L   H   L
```

4. Press Select until the sensor/switch to be tested is shown on display. The sensors and switches are:

Scanner switches/sensors:
    DOC   ADF document sensor
    SCP   Scan Position sensor
    DS1   Document size sensor
    DS2   Document size sensor (RX)
    SCI   Scan interlock switch

Printer switches/sensors:
    PIS   Area #1 jam sensor
    PRP   Area #2 jam sensor
    PJ1   Not used
    PJ2   Area #3 jam sensor
    THS   Thermal head position sensor
    NDN   Donor out sensor
    DNS   Donor size sensor (RX)
    PRI   Printer interlock switch
    RHI   Right cover latch switch

Test 16, Sensor Test (continued)

Paper tray switches/sensors:

UPL	Low paper sensor
UPN	Paper out sensor
UP1	Paper size sensor, 1 (refer to 6.1.3)
UP2	Paper size sensor, 2 (refer to 6.1.3)
UP3	Paper size sensor, 3 (refer to 6.1.3)
UP4	Not used

Auxiliary tray switches/sensors:

LPL	Low paper sensor
LPN	Paper out sensor
LP1	Paper size sensor, 1 (refer to 6.1.3)
LP2	Paper size sensor, 2 (refer to 6.1.3)
LP3	Paper size sensor, 3 (refer to 6.1.3)
LP4	Not used

5. Actuate and deactuate the sensor/switch being tested. The H/L display should change.

6. Press Stop. The terminal will return to the idle mode.

Test 17, Frequency Test

This test enables the sending of a single frequency tone to a remote location.

1. Enter service mode.

2. Press 1 and 7 on the keypad, then press Enter. The display will indicate:

```
17 FREQUENCY TEST
PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
17 FREQUENCY TEST > 0 Hz
PRESS [SELECT] TO CHANGE OR [STOP]
```

4. Press Select to cycle through the frequencies. They are:

0 Hz	1850 Hz
400 Hz	2100 Hz
462 Hz	2400 Hz
1004 Hz	300 BPS
1080 Hz	V29 96
1100 Hz	V29 72
1300 Hz	V27 48
1500 Hz	V27 24
1650 Hz	G2 W/B
1700 Hz	V33 144
1800 Hz	V33 120

5. Press Stop.

The test will stop and the terminal will return to the idle mode.

Test 18, Touch Tone Test (DTMF Generator)

This test checks the DTMF generator and sends DTMF tones over the telephone line.

1. Disconnect the telephone line cord.

2. Enter service mode.

3. Press 1 and 8 on the keypad, then press Enter. The display will indicate:

```
18 TOUCH TONE TEST
PRESS [START] OR [STOP]
```

4. Press Start. The display will indicate:

```
18 TOUCH TONE TEST > "0"
PRESS [SELECT] TO CHANGE OR [STOP]
```

5. Press Select to cycle through the tones. They are:

0	6	A	852 Hz
1	7	B	941 Hz
2	8	C	1209 Hz
3	9	D	1336 Hz
4	*	697 Hz	1447 Hz
5	#	770 Hz	1633 Hz

6. Press Stop.

The test will stop and the terminal will return to the idle mode.

Test 20, Hard Drive Exerciser Test

NOTE: This test is only available when the hard disk option is installed.

This test performs multiple read/write tests to exercise the drive.

1. Enter service mode.

2. Press 2 and 0 on the keypad, then press Enter. The display will indicate:

```
        20 HARD DISK TEST
      PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
        20 HARD DISK TEST
      PRESS [STOP] TO END
```

then:

```
mm 46 rr cccc  xx xx xx xx xx xx xx xx
               xx xx xx xx xx xx xx xx
```

mm = loop counter
46 = program routing number
rr = test result (OK/NG)
cccc = error code
xx = test information

4. Allow the test to run through at least two loops, then press Stop.

A test report will print, then the terminal will return to the idle mode.

Test 22, RS-232 Loopback Test

NOTE: This test is only available when the RS-232 interface PWB option is installed.

This test exercises the receivers and drivers on the RS-232 interface PWB.

1. Disconnect the interface cable at the RS-232 interface PWB, and connect a loopback tool (short pin 2 and pin 3, pin 4 and pin 5, and pin 6 and pin 20).

2. Enter service mode.

3. Press 2 twice on the keypad, then press Enter. The display will indicate:

```
      PRESS [START] OR [STOP]
```

4. Press Start. The display will indicate:

```
        PRESS [STOP] TO END
```

then:

```
mm 39 rr cccc  xx xx xx xx xx xx xx xx
               xx xx xx xx xx xx xx xx
```

mm = loop counter
39 = program routing number
rr = test result (OK/NG)
cccc = error code
xx = test information

5. Allow the test to run through at least two loops, then press Stop.

A test report will print, then the terminal will return to the idle mode.

6.2.5 Test 04, Service Mode Options Report

This report is similar to the customer option report. The service mode report provides additional information such as counter totals for paper and document feed malfunction, status of soft switch settings, and current firmware levels.

1. Enter service mode.

2. Press 0 and 4 on the keypad, then press Enter. The display will indicate:

```
      04 OPTIONS REPORT PRINT
      PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
     04 OPTIONS REPORT PRINTING
         PRESS [STOP] TO END
```

NOTE: Pressing Stop will immediately terminate the report print.

The terminal will print the report, then return to the idle mode.

NOTE: It is recommended that a copy of the Service Mode Options Report be left with the machine if any of the soft switches have been changed. This will provide information on future service calls concerning proper machine setup. The report should be placed under the operator guide in the plastic case.

Test 20, Hard Drive Exerciser Test

NOTE: *This test is only available when the hard disk option is installed.*

This test performs multiple read/write tests to exercise the drive.

1. Enter service mode.

2. Press 2 and 0 on the keypad, then press Enter. The display will indicate:

```
20 HARD DISK TEST
PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
20 HARD DISK TEST
PRESS [STOP] TO END
```

then:

```
mm 46 rr cccc  xx xx xx xx xx xx xx xx
               xx xx xx xx xx xx xx xx
```

mm = loop counter
46 = program routing number
rr = test result (OK/NG)
cccc = error code
xx = test information

4. Allow the test to run through at least two loops, then press Stop.

A test report will print, then the terminal will return to the idle mode.

Test 22, RS-232 Loopback Test

NOTE: *This test is only available when the RS-232 interface PWB option is installed.*

This test exercises the receivers and drivers on the RS-232 interface PWB.

1. Disconnect the interface cable at the RS-232 interface PWB, and connect a loopback tool (short pin 2 and pin 3, pin 4 and pin 5, and pin 6 and pin 20).

2. Enter service mode.

3. Press 2 twice on the keypad, then press Enter. The display will indicate:

```
PRESS [START] OR [STOP]
```

4. Press Start. The display will indicate:

```
PRESS [STOP] TO END
```

then:

```
mm 39 rr cccc  xx xx xx xx xx xx xx xx
               xx xx xx xx xx xx xx xx
```

mm = loop counter
39 = program routing number
rr = test result (OK/NG)
cccc = error code
xx = test information

5. Allow the test to run through at least two loops, then press Stop.

A test report will print, then the terminal will return to the idle mode.

6.2.5 Test 04, Service Mode Options Report

This report is similar to the customer option report. The service mode report provides additional information such as counter totals for paper and document feed malfunction, status of soft switch settings, and current firmware levels.

1. Enter service mode.

2. Press 0 and 4 on the keypad, then press Enter. The display will indicate:

```
04 OPTIONS REPORT PRINT
PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
04 OPTIONS REPORT PRINTING
PRESS [STOP] TO END
```

NOTE: *Pressing Stop will immediately terminate the report print.*

The terminal will print the report, then return to the idle mode.

NOTE: *It is recommended that a copy of the Service Mode Options Report be left with the machine if any of the soft switches have been changed. This will provide information on future service calls concerning proper machine setup. The report should be placed under the operator guide in the plastic case.*

6.2.6 Test 08, Service Mode Diagnostics

These tests are individual subroutines for testing electronic subsystems in the terminal. All subroutines can be executed together (automatic) or one at a time (individual). Table 1 provides a list of the tests.

Automatic

1. Enter service mode.

2. Press 0 and 8 on the keypad, then press Enter. The display will indicate:

```
08 SERVICE MODE DIAGNOSTICS > 00
      PRESS [START] OR [STOP]
```

3. Press Start. The display will indicate:

```
08 SERVICE MODE DIAGNOSTICS > 00
      PRESS [STOP] TO END
```

then:

```
mm nn rr cccc  xx xx xx xx xx xx xx xx
               xx xx xx xx xx xx xx xx
```

mm = loop counter
nn = test number
rr = test result (OK/NG)
cccc = error code
xx = test information

When a test loop is complete, a tone will sound, test results will print, then the terminal will begin another loop.

NOTE: If it is necessary to stop a test before it is complete, press the Stop key at any time.

4. Press Stop. The test will terminate, test results will print, and the terminal will return to the idle mode.

Individual

1. Enter service mode.

2. Press 0 and 8 on the keypad, then press Enter. The display will indicate:

```
08 SERVICE MODE DIAGNOSTICS > 00
      PRESS [START] OR [STOP]
```

3. Enter the two digit test number (refer to Table 1), then press Start. The display will indicate:

```
mm nn rr cccc  xx xx xx xx xx xx xx xx
               xx xx xx xx xx xx xx xx
```

mm = loop counter
nn = test number
rr = test result (OK/NG)
cccc = error code
xx = test information

4. Press Stop. The test will terminate, test results will print, and the terminal will return to the idle mode.

Table 1. Tests 00-46

Test No.	Test Description
00	All tests are executed
02	D-RAM Test
04	H16 Timer Test
08	MP Test
09	IMH Test
10	ACEE Test
11	PC TEST
12	VP Test
13	H16 DMA Test
14	V-RAM Test
15	CODEC Test
16	H16 Mech Interface Test
17	Mech RAM/ROM Test
18	Mech ROM Test
19	Scanner Black/White Test
20	EPROM Test
21	C.G. ROM Test
22	S-RAM Test
23	EEPROM Test
24	RTC Test
25	File Directory Test
26	File Test
27	G3 Device Test
28	G3 SIO Loop Back Test (1)
29	G3 Modem & NCU Test
30	G3 Modem & NCU Loop Back Test
31	G3 DTMF Generator & Detector Loop Back Test *1
32	G3 SIO Loop Back Test (2) ①
33	G3 SIO Loop Back Test (3) ①

Table 1. Tests 00-46 (continued)

Test No.	Test Description
34	Option D-RAM Test ②
36	RS-232 EPROM Test ③
37	RS-232 Device Test ③
38	RS-232 DP-RAM Test ③
39	RS-232 Loopback Test ③
42	HD EP-ROM Test ④
43	HD Device Test ④
44	HD Diag Test ④
45	HD Write/Read Test ④
46	HD Exerciser Test ⑤

① Only tested when encryption interface PWB is installed.

② Only tested when memory expansion PWB is installed.

③ Only tested when RS-232 interface PWB or LAN Fax Server PWB is installed.

④ Only tested when hard disk interface PWB is installed.

⑤ Test is not performed when all tests (00) are exectued. Test performed during service mode test 20.

6.3 Product Specifications

6.3.1 Product Codes

USO

0D7, Model A   Base terminal

French Canada

0D7, Model B   Base terminal

RX

0D6, Model A   Base terminal

0D6, Model B   Base terminal with auxiliary paper tray, RS-232, and 1 MB memory expansion options.

6.3.2 Physical Specifications

Base terminal

Height	17.3"	(439.5 mm)
Width	20.8"	(530 mm)
Depth	21.2"	(540 mm)
Weight	57 lbs	(25.7 kg) unpackaged
	74 lbs	(33.2 kg) packaged

Base terminal with auxiliary tray

Height	21.5"	(544.5 mm)
Width	20.8"	(530 mm)
Depth	21.2"	(540 mm)
Weight	94 lbs	(42.6 kg) unpackaged

6.3.3 Space Requirements

Minimum space requirements are needed for normal operator and service maintenance functions (Figure 1). The terminal should be placed on a stable, flat surface within 5 feet (1.5 meters) of a telephone outlet and within 5 feet (1.5 meters) of a grounded electrical outlet. Clearance should be maintained above the unit so the covers can be opened. The terminal should not be contained within any type of enclosure.

The terminal is considered movable if proper telephone interface is available.
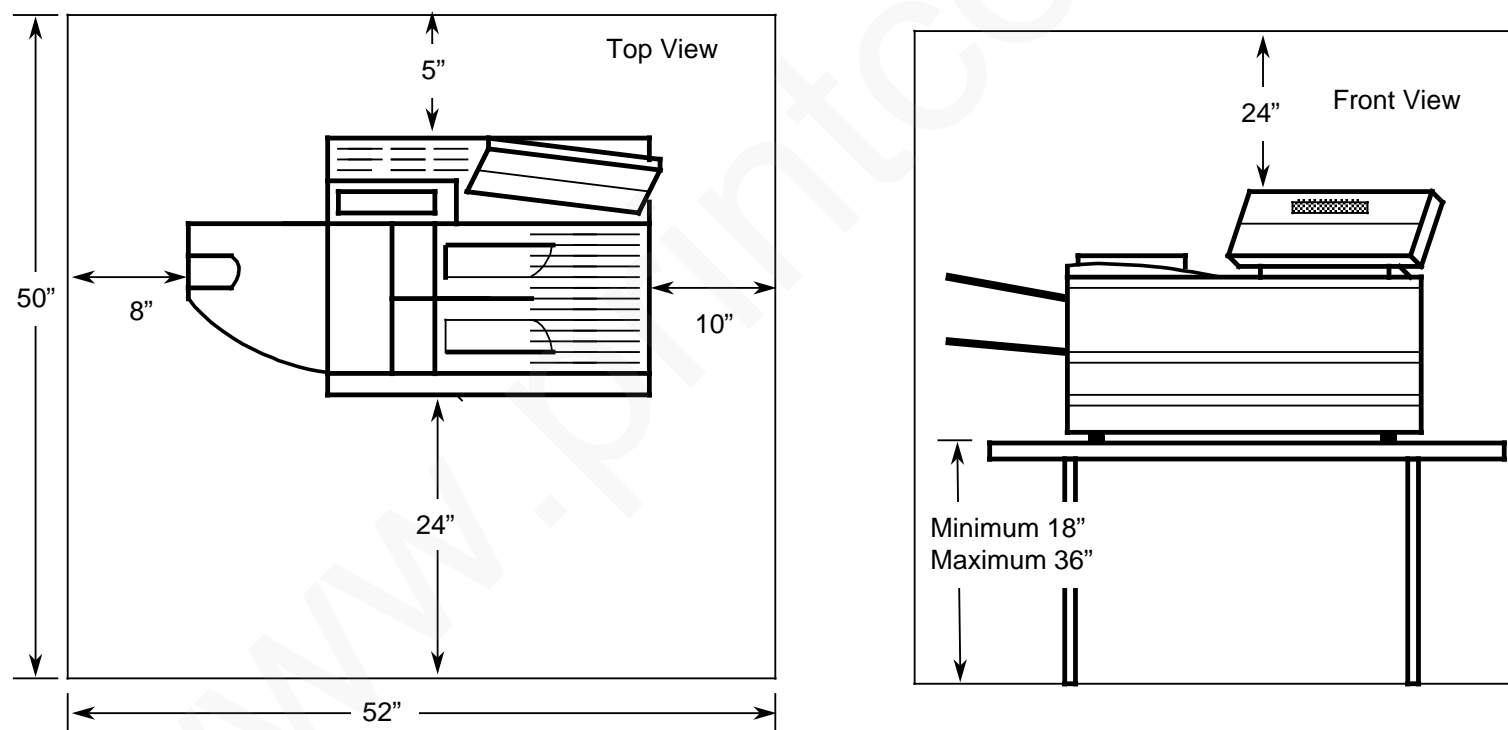
7012-301

Figure 1. Space Requirements

6.3.4 Electrical Specifications

Single phase (2 wires plus ground)

Voltage:
USO   104 to 127 VAC (nominal 115 VAC)
         @ 50 Hz ± 1 Hz or 60 Hz ± 1 Hz
RX   200 to 240 VAC (nominal 220 VAC)
         @ 50 Hz ± 1 Hz or 60 Hz ± 1 Hz

Power Consumption (maximum)

Operating   230 W
Standby   65 W

A standard two pole, three wire grounded receptacle is required.

Meter Readings (USO)

Between AC Hot and Neutral 104 to 127 VAC
Between Gnd and AC Hot   104 to 127 VAC
Between Gnd and Neutral (longer slot) less than 3 VAC

Meter Readings (RX)

Between AC Live and Neutral 200 to 240 VAC.
Between AC Live and Neutral 130 VAC.
Between Gnd and Return 130 VAC.

6.3.5 Environmental Specifications

Temperature	60° to 90° F (15° to 32° C)
Humidity	15% to 85% w/o condensation
Elevation	Maximum 9,900 feet (3,000 metres) above sea level
Heat Dissipation	Operating 785 BTU/Hr Standby 221 BTU/Hr

6.3.6 Recording Paper

The following paper is recommended for use in the 7033 terminal.
USO   Xerox 4024 DP copy paper
         Xerox 10 Series Smooth copy paper
RX   Xerox 80 gm copy paper

6.3.7 Donor Film

USO

Length	656'	(200 M)
Width	8.6"	(220 mm)

USO Starter Roll

Length	197'	(60 M)
Width	8.6"	(220 mm)

RX

Length	656'	(200 M)
Width	10.2"	(260 mm)

RX Starter Roll

Length	197'	(60 M)
Width	10.2"	(260 mm)

6.3.8 Original Stacking Requirements

Originals are loaded into the ADF face down and lead edge to the left. They are aligned by adjusting the document guides to the width of the originals.

Originals loaded in the ADF may be mixed in weight and length, but should not be mixed in width.

Weight	13 to 36 pound (45 to 127.9 grams/ square meter)
Width	4.1 to 11.7 inches (105 to 297 mm)
Length	4.5 to 18.1 inches (144 to 420 mm)

NOTE: Originals longer than 18.1 inches (420 mm) can be used by manually assisting the ADF. Originals longer than 36 inches (900 mm) also require the selection of the long original feature.

The input tray (ADF) capacity for 13 to 36 pound (45 to 127.9 grams/square meter) paper is 50 documents. Mixed weight stacks of more than 30 documents shall include a maximum of four 32 or 36 pound documents.

6.4 Tools and Supplies

6.4.1 Tools

Part No.	Description
601S832	Common hardware kit
600T24	Shim stock
600T0785	Flashlight
600T1043	Phillips screw starter
600T1121	"E" Ring puller / applicator
600T1502	4 "X-Point #1 Blade
600T1616	Digital volt meter
600T1656	Universal Loopback Tool
600T1617	Digital Multimeter Leads kit
600T40201	Screwdriver 4" x 1/4"
600T40206	Phillips pocket screwdriver
600T40207	Jewelers screwdriver
600T40212	Xcelite handle
600T40502	Combination wrench, 7.0 mm
600T40702	Socket, 7.0 mm (1/4 inch drive)
600T40901	Long nose pliers
600T40903	Diagonal cutters
600T40906	Crimping pliers
600T40907	Wire strippers
600T41102	Hex key, 2.0 mm
600T41107	Hex key, 1.5 mm
600T41502	Rule, 6-Inch
600T41602	Jumper 12-inch
600T41801	Round file, 6-Inch
600T41802	Flat file, 6-Inch
600T41901	Brush
600T41903	Scribe
600T41906	Spring hook
600T41909	Magnet pickup
600T41910	Inspection mirror
600T42001	ESD kit
600T90318	Lens cleaner (RX)
600T90356	Antistatic cleaner (RX)
499T08032	RS-232 Signal Monitor

6.4.2 Supplies

Part No.	Description
8R33	Skip tone pads, 2/bag, 25 Bags / pack
8R90019	Paper towels (RX)
8R90020	Film remover (RX)
8R90034	Belt cleaner (RX)
35P3191	Heavy duty towel (USO)
43H12	Lens and Mirror Cleaner (USO)
43P45	Film remover, 8-OZ can (USO)
43P48	Formula "A" cleaner, 8-OZ
43P58	Hand cleaner (USO)
43P67	CLEAN-UPS; 5 x 8 Inch paper towel
43P73	2 Part epoxy (USO)
82P151	Test pattern (XTP327.000)
600S697	Small cable ties (kit)
600S4372	Cleaning pads, 5/Pack, 10 x 17 Inch.
601S746	Typewriter platen cleaner (USO)
97K96310	Repack kit

6.5 Installation (7033/7033S) and Removal

6.5.1 Kit Contents (RX)

Terminal carton:

- Job reserve cards
- Operator guide (plastic sleeve)
- Cleanups
- BS 6301 label
- Front panel overlays (English)

Local accessory carton:

- Language EPROMS
- PTT line cord
- Operator handbook
- Power cord
- Translated front panel
- Translated operator guide
- Log book
- Local PTT / safety labels

6.5.2 Installing the Terminal

RX NOTE: Installation procedures are designed on the basis that pre-installation has been completed prior to delivery to the customer.

Unpack the terminal

1. Cut around the bottom of the shipping carton. Refer to the directions on the carton.

2. Lift the top portion of the shipping carton off of the terminal.

3. Remove accessory items from shipping carton (Figure 1).

   a. Remove the accessory bag. The bag includes the following items.

      - Job reserve cards (1 package)
      - Customer assistance labels
      - Operator guide

   b. Remove the bag containing the user handbook.

   c. Remove the bag containing the power cord and the telephone line cord.

   d. Remove the package of paper, document output tray, and copy output tray.

   e. **(USO only)** Remove the telephone handset kit.

   f. **(RX only: 7033S units with auxiliary tray)** Remove control panel and bracket.

   g. Remove the left and right top end-caps.

   CAUTION

One person should not attempt to lift the terminal. To avoid injury, a second person should assist when placing the terminal in position.
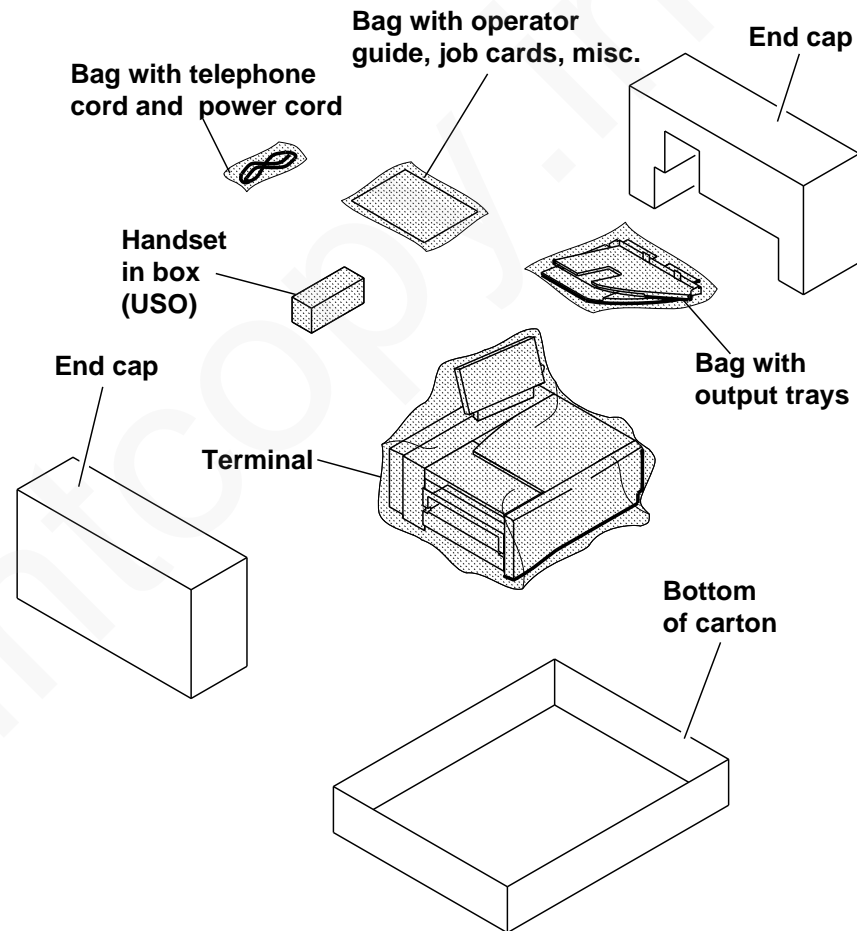
Figure 1. Shipping carton contents

7033-282

2. Set up the terminal.

   a. Using the left and right sides as lifting points, remove the terminal from the carton.

   b. Position the terminal in the customer-designated location.

NOTE: The table/stand for the terminal must be capable of supporting 75 pounds and meet the space requirements. A stand is available as an option from Xerox.

3. Remove packing material.

   a. Remove all tape from external covers.

   b. Remove protective film from the control panel.

   c. Open printer cover and remove packing material from roller.

Install the operator guide

1. Remove the operator guide from the accessory bag.

2. Slide the guide into the holder located below the paper tray.

Install the customer assistance label

USO:

1. Record the serial number and customer assistance telephone number on the customer assistance label:

   a. Copy the serial number from the plate located under the donor film cartridge near the rear frame.

2. Also record the serial number in the "User Handbook" on the page titled "Requesting assistance."

3. Install the customer assistance label.

   a. Remove the protective cover backing and **carefully** position the cover over the label.

   b. Place the label on the base of the control panel.

RX:

Record all necessary details required by your organization.

Connect the telephone handset and line cord

USO:

1. Install the telephone handset.

   a. Remove the handset from the box and place the handset on the cradle.

   b. Insert the end of the telephone handset card into the modular jack marked TEL on the terminal rear cover.

2. Install the telephone line cord.

   a. Insert one end of the telephone line cord into the modular jack marked LINE on the terminal rear cover.

   b. Insert the other end of the cord into the modular jack at the telephone wall jack.

3. Verify telephone operation.

   a. Lift handset and listen for a dial tone.

   b. If no dial tone is heard, check the connections. If checking the connections does not resolve the problem, refer to Service Call Procedures.

   c. Place the handset on the cradle.

RX:

1. Install the optional handset.

   a. Connect the handset to the appropriate connections on the telephone line filter PWB.

2. Install the telephone line cord.

   a. Connect the telephone line cord to L1 and L2 on the telephone line filter PWB.

(RX 7033S only) Install control panel

1. Install the control panel overlay (if not applied during pre-install).

2. Install the control panel mounting bracket to the EMI shield and secure it with four screws.

3. Attach the control panel to the mounting bracket with three screws.

4. Connect the harness to the rear of the control panel.

5. Install the rear control panel cover.

Install output trays and load paper

1. Install the document output tray (Figure 2).

    a. Position the document output tray in the upper slot of the left side cover.

    b. Rotate the tray fastener one-quarter turn counterclockwise to secure the tray in position.

2. Install the copy output tray (Figure 2).

    a. Slide the copy output tray into the lower slot of the left side cover. Bias the tray down slightly while sliding it in to secure the front and rear edges.

3. Load paper in the paper tray.

Install the power cord

1. Locate and install the power cord.

    a. Plug one end of the power cord into the receptacle at the right rear corner.

    b. Verify polarity of the AC wall outlet, then plug the other end of the power cord into the wall outlet.

2. Verify power. Approximately 10 seconds after connecting the power cord, the display indicates:

```
          LOAD ORIGINALS FACE DOWN
00:00     ENTER TERMINAL ID/NAME    0-0-0
```

If this is not displayed, refer to Service Call Procedures.

Verify terminal operation

1. Perform self test diagnostics.

    a. Lower the flip panel and press Diagnostics.

    b. Select Self Test, then press the Enter key.

    c. If an error code is displayed during the test, record the error code, then press Start to continue the test.

**Tray fastener
(Rotate 1/4 turn
counterclockwise)**

Figure 2. Install output trays

d. At the end of diagnostics, a test pattern will print and the display will indicate:

```
REPORT COMPLETE
```

e. Close the flip panel.

2. Evaluate the diagnostic operation.

   a. If an error code was displayed during self test, refer to the Service Call Procedures.

   b. Compare the test pattern with the sample in section 3. If the test pattern compares, the printer electronics are functioning correctly. If there are quality problems with the test pattern, refer to Service Call Procedures.

3. Perform a copy operation.

   a. Place the Test Pattern 82P151 face down, with the lead edge to the left, into the ADF.

   b. Adjust the document guides to the width of the test pattern. This display will indicate:

```
SELECT FEATURES THEN DIAL OR RESERVE JOB
OR PRESS [COPY]
```

   c. Press Copy, then press Start.

   d. The terminal will print a copy. When the copy operation is complete, a tone will sound and the terminal will return to idle after 5 seconds.

   e. Compare the copy with the original. If the test pattern compares, the scanner and printer are functioning correctly. If there are quality problems, refer to Service Call Procedures.

4. Consult with the customer for setting Date and Time, and Local ID number.

6.5.3 Removing/Shipping the Terminal

NOTE: When moving or shipping the terminal, use Repack Kit 97K96310. This kit is used for a terminal with or without the auxiliary paper tray installed.

1. Disconnect the terminal.

   a. Unplug the AC power cord from the wall outlet, and the terminal receptacle.

   b. Disconnect the telephone line cord from the wall jack and the jack at the rear of the terminal.

   c. Disconnect the handset cord from the jack and remove the handset from the cradle.

   d. Remove the document and copy output trays.

2. Open the repack kit carton and remove packing materials.

3. Place the terminal and accessories in the carton.

   a. If no auxiliary tray is installed on the terminal (7033), insert the fillers in the carton to pack the terminal firmly in position.

   b. Wrap or package the accessories in the carton.

   c. Close the carton and secure flaps with tape.

6.6   General Information

6.6.1   Telephone Requirements (USO)

This terminal interfaces with the telecommunications network through an FCC (Federal Communications Commission) approved (registered) data coupler.

The internal registered data coupler is of the permissive mode configuration and can be connected to all types of switched (Dial-Up) telecommunications networks (D.D.D., PBX, Key systems, On-Site, Centrex, etc.).

The terminal interfaces the telephone network through a modular 6 position, 4 pin jack (USOC RJ11C) supplied by the telephone company.

FCC Registration Number
    AQX63C-19885-DP-E
Ringer equivalence = 0.5 B
Application up to 14400 BPS facsimile
Telephone may be Touch-Tone® or pulse/rotary dial.

d. At the end of diagnostics, a test pattern will print and the display will indicate:

```
┌─────────────────────────────────┐
│       REPORT COMPLETE           │
│                                 │
└─────────────────────────────────┘
```

e. Close the flip panel.

2. Evaluate the diagnostic operation.

   a. If an error code was displayed during self test, refer to the Service Call Procedures.

   b. Compare the test pattern with the sample in section 3. If the test pattern compares, the printer electronics are functioning correctly. If there are quality problems with the test pattern, refer to Service Call Procedures.

3. Perform a copy operation.

   a. Place the Test Pattern 82P151 face down, with the lead edge to the left, into the ADF.

   b. Adjust the document guides to the width of the test pattern. This display will indicate:

```
┌───────────────────────────────────────┐
│ SELECT FEATURES THEN DIAL OR RESERVE JOB│
│ OR PRESS [COPY]                         │
└───────────────────────────────────────┘
```

   c. Press Copy, then press Start.

   d. The terminal will print a copy. When the copy operation is complete, a tone will sound and the terminal will return to idle after 5 seconds.

   e. Compare the copy with the original. If the test pattern compares, the scanner and printer are functioning correctly. If there are quality problems, refer to Service Call Procedures.

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FCC Registration Number
   AQX63C-19885-DP-E
Ringer equivalence = 0.5 B
Application up to 14400 BPS facsimile
Telephone may be Touch-Tone® or pulse/rotary dial.

6.6.2 Electrostatic Discharge Precautions

Observe the following precautions when handling printed wiring boards (PWBs) in the terminal.

- Always use the ESD kit (600T42001) when handling PWBs. If one is not available, use the following procedure.

  Before handling any PWB, ground yourself to an earth or building ground. Use a key or paper clip in your hand to transfer the charge from you to ground. Do this every few minutes for prolonged work on PWBs.

- Keep PWBs in the antistatic bags or original packaging until ready to install them.

- Return or store the PWBs in the original packaging, including antistatic bags.

- When handling the PWBs, handle them by their edges.

- When handling integrated circuit chips, handle them only by the body and never by the leads (legs). If available, keep them in antistatic foam until ready to install.

- Never place the PWBs, integrated circuit chips or components on a metal surface.

6.6.3 Glossary of Mnemonics

CED	Called Station Identification
CFR	Confirmation to Receive
CIG	Calling Subscriber Identification
CNG	Calling Tone
CRP	Command Repeat
CSI	Called Subscriber Identification
DCN	Disconnect
DCS	Digital Command Signal
DE6	1650 Hz. Signal Detection
DE8	1850 Hz. Signal Detection
DIS	Digital Identification Signal
DTC	Digital Transmit Command
DTMF	Dual Tone Multiple Frequency
EOM	End of Message
EOP	End of Procedure
EQM	Line Quality
FCD	Facsimile coded data
FCS	Frame checking sequence
FIF	Facsimile Information Field
FTT	Failure to Train
GC	Group Command
GI	Group Identification
HDLC	High Level Data Link Control
LCS	Line Conditioning Signal
MH	Modified Huffman
MCF	Message Confirmation
MPS	Multi-Page Signal
NSC	Non-Standard Facilities Command
NSF	Non-Standard Facilities
NSS	Non-Standard Set-Up
PHP	Phasing Period
PIN	Procedural Interrupt Negative
PIP	Procedural Interrupt Positive
PIS	Procedure Interrupt Signal
PIX	Picture data (pixel)
PRI-EOM	Procedure Interrupt-EOM
PRI-EOP	Procedure Interrupt-EOP
PRI-MPS	Procedure Interrupt-MPS

RTN	Retrain Negative
RTP	Retrain Positive
RL EQL	Receive Link Amplitude Equalizer
T2 EQL	Two baud taps Equalizer
TCF	Training Check
TRN	Train
TSI	Transmitting Subscriber Identification
TL EQL	Transmit Link Amplitude Equalizer
ZZF	German Configuration 6 Standards

ECM Mnemonics

CTC	Continue to Correct
CTR	Response for Continue to Correct
EOR	End of Retransmission
ERR	End Retransmission Response
FCF	Facsimile Control Field
PPR	Partial Page Request
PPS	Partial Page Signal
RR	Receive ready
RNR	Receive not ready

6.7 Change Tag/MOD Information

6.7.1 Tag/MOD Index

The Tag/MOD matrix is located on the cross frame beneath the donor film carrier.

All important modifications to the terminal that are installed in the factory or in the field, are identified by a number marked on this matrix. The appropriate Tag/MOD number should be marked off or removed from the matrix whenever a Tag/MOD is installed. Determine the Tag/MOD level of the terminal by the Tag/MOD matrix located inside of the terminal.

Refer to the tag classification for information as to when to use the tag. Read the description to determine how the terminal will benefit from the Tag/MOD. Refer to the kit number to order the modification kit. Refer to the bulletin number for additional tag information.

Refer to the factory and field install serial numbers to determine which Tag/MODs were installed at the factory and which are to be installed in the field. The manual is revised to include the latest machine changes listed in Table 1. Tag/MOD Index.

Tag/MOD Classification (USO):

Classification of Tag/MODs are identified below by a letter (M, N, O, R, or S). The list below defines the degree of importance assigned to each letter:

M Mandatory

N Not installed in field

O Optional

R Repair

S Situational

Tag/MOD Classification (RX):

Classification of the Tag/MOD is identified below by a Class number. The list below defines the degree of importance assigned to each Class number:

Class 1 Safety Tag/MOD which must be made in the field immediately; parts are available.

Class 2 Tag/MOD made in the field, retroactive on all machines, on next service call.

Class 3 Repair by replacement Tag/MOD.

Class 4 Tag/MOD incorporated at the direction of local management or to meet the customer's requirements.

Class 5 Production only.

Table 1. Tag/MOD Index

Tag/MOD and Classification	Description	Kit and Bulletin Numbers	Cut-in Serial Number	Part Number
1 Class 3	Video processor ASIC change on main PWB for resolution conversion (300 to 200 SPI) improvement. Printer control ASIC change on main PWB for print quality improvement.	----	USO 7032: 010001 USO 7033: 010013 FC 7032: 060001 FC 7033: 0100001 LA 7032: 070001 LA 7033: 070000 RX 7033: 653835	USO: 140K79164 RX: 140K79174

Table 1. Tag/MOD Index Cont:

Tag/MOD and Classification	Description	Kit and Bulletin Numbers	Cut-in Serial Number	Part Number
2 ▮O Class 3	Thermal head changed for graininess improvement.	▮N/A	USO 7032: 010001 USO 7033: 012993 FC 7032: 060001 FC 7033: 0100061 LA 7032: 070001 LA 7033: 070000	USO: 130K97991 RX: 130K98860
3 ▮R Class 3	Control panel design changes: Brighter LEDs, move "Special Char" function, new firmware.	▮N/A	USO 7032: 010001 USO 7033: 010113 FC 7032: 060001 FC 7033: 0100000 LA 7032: 070001 LA 7033: 070000	USO: 101K97603 RX: 101K97614
4 ▮O Class 3	▮Tag 4 improves donor film savings by increasing the speed of the printer output rollers by adding a new belt and a new pulley. Units with Tag 4 installed can be identified visually by the color of the pulley; the new one is white. After Tag 4 has been installed, check Soft Switch 051, Bit 0. This bit controls printer timing and it must be set to "1." If this bit is set to "0" with Tag 4 installed, printer jams will occur. *NOTE: When replacing a RAM/ROM PWB or upgrading firmware, check to see if Tag 4 is installed in the terminal. If it is, make sure that Soft Switch 051, Bit 0 is set to 1. If Tag 4 is not installed, Soft Switch 051, Bit 0 must be set to 0.*▮	▮N/A ▮700P91981	USO 7032: 010001 USO 7033: 016473 FC 7032: 060001 FC 7033: 0100241 LA 7032: 070001 LA 7033: 070000	020E97290 ▮Pulley 023E97330 ▮Belt

Table 1. Tag/MOD Index Cont:

Tag/MOD and Classification	Description	Kit and Bulletin Numbers	Cut-in Serial Number	Part Number
5 Class 3	Upper printer harness changed to correct intermittent problems with connector P109 (Jam in area 1).	----	USO 7032: 010001 USO 7033: 016473 FC 7032: 060001 FC 7033: 0100241 LA 7032: 070001 LA 7033: 070000	USO: 152K89584 RX: 152K89574
6 Class 3	Tag 6 denotes the initial release of firmware (Level 4.70) for the Telecopier 7032 RAM/ROM and G# PWA's. This new firmware also upgrades the 7033 to correct the following subjects associated with firmware level 4.58. - When the Transmission Report is printed only the 50% reduction of the image is printed. No log is printed. - The Terminal will reset with FP30/8504 if the terminal is in forced G2 and Manual Answer Mode is ON. - The [EXIT] key is not functional in Job Reserve if the Keypad data(telephone number) is entered. - FP49/853A resets error code generated during a receive operation. - In header setup, select Contents, Local Name. Information entered will be displayed and printed also in the Company Logo field. - A 7033 which has been RAM Cleared, will not answer a call if Auto Answer Delay is set to 0. - Corrects FP49/853A resets error code generated during a receive operation.	----	USO 7032: 010001 USO 7033: 016473 FC 7032: 060001 FC 7033: 0100241	USO 7032: 140K27081 USO 7033: 140K73507 FC7032: 140K27091 FC 7033: 140K73932 USO/FC G3 PWB: 140K73539

Table 1. Tag/MOD Index Cont:

Tag/MOD and Classification	Description	Kit and Bulletin Numbers	Cut-in Serial Number	Part Number
7 Class 3	Tag 7 is a new Options Mother PWB that corrects for a Font Data transfer problem between the RS232 PWB and the Main PWB. The new Option Mother PWB is contained in the RS232 Option Kit.	----	N/A	USO/RX: 140K30230
8 Class 3	Tag 8 is a firmware change (Level 4.76) to the RAM/ROM and G3 PWB's for Hard Disk compatibility. This change also corrects the following. - Corrects FP48/8539 resets on a7032 during a multi-poll operation. - A 7033 will not permit a mailbox poll operation to be set up while the Terminal is receiving and printing document(s). - Terminal lockups requring a power reset. - A 7033/32 will reset with FP30/8509 if a TC3010 attempts to poll either a private or public mailbox. - Corrects an Activity Report that was corrupted with a telephone symbol and other characters when it printed following a store & forward operation. - Additional dial directory entries can be added to a dial group that is full, however, the entries are not saved. The Operator is not informed that the list is full. - The 7033 generates an incorrect display message when loading a local mailbox during dual access mode. The terminal then generates the corrected message "STORING PAGE TO MEMORY COMPLETE" after it has completed loading documents to local mailbox(s) and is no longer performing in a dual access mode.	----	USO 7032: 011861 USO 7033: 016473 FC 7032 : 60061 FC 7033 : 100241 LA 7032 : 070001 LA 7033 : 070000 RX 7033 : 654149	USO R/R PWB: 140K73509 FC R/R PWB: 140K73935 RX R/R PWB: 140K73517 USO, FC, & LA G3 PWB: 140K32670

Table 1. Tag/MOD Index Cont:

Tag/MOD and Classification	Description	Kit and Bulletin Numbers	Cut-in Serial Number	Part Number
9 Class 3	Tag 9 is a firmware change (Level 4.84) to the RAM/ROM and G3 PWB's. This change corrects the following problems. - Corrects blank pages/partially blank pages during a transmission of a multipage document if the sending terminal encounters noise on the telephone line and then trainsdowns. - During mailbox set up some mailboxes will not accept documents stored to them giving an indication that the mailbox does not exist, ie a ghost mailbox. Documents sent to this ghost mailbox by a remote terminal may in some cases be received and then automatically be deleted. Documents were lost yet, transmission and Activity Reports indicate documents were sent and received. Relay operations using a ghost mailbox will result in documents being relayed to locations not specified. - The delay time that the terminal remains in a non-secure mode has been reduced. - Auto receive reduction not operational when printing from memory. - With Transmission report "ON", when performing a SEND/POLL operation to a remote 7032/7033 and the polled mailbox is empty, the Transmission Report is not complete and does not inform the operator that the send operation was successfully completed.	600K26681	USO 7032: 012101 USO 7033: 017373 FC 7032 : 60061 FC 7033 : 100301 LA 7032 : 070241 LA 7033 : 070120	USO R/R PWB: 140K33570 FC R/R PWB: 140K73936 LA R/R PWB: 140K28601 USO, FC, & LA G3 PWB: 140K32671

Table 1. Tag/MOD Index Cont:

Tag/MOD and Classification	Description	Kit and Bulletin Numbers	Cut-in Serial Number	Part Number
10 Class 3	Tag 10 implements the Trellis Modem in the 7032/7033 and also the MMR compression method in the DIS/DCS/DTC frames. Soft Switch 027 was cut-in by manufactoring in 7032 and 7033 terminals with Level 4.84 Firmware. The new Soft switch setting (00101100) will remain in memory so long as a Ram Clear is not performed. If a Ram Clear is performed then soft switch #027 data must be re-entered.		XC 7033: 019533 XC 7032: 014141 FC 7033: 100361 FC 7032: 60061 LA 7033: 070180 LA 7032: 070241	Trellis Modem 140K79770
11 Class 3	Tag 11 issues the Spanish Language EPROM (Level 4.84 & FT0L 4.91) on the RAM/ROM PWB.	----	LA 7033: 70180 LA 7032: 70241	LA R/R PWB: 140K28602
12 Class 3	Tag 12 upgrades a 7032 or 7033 terminal for operation with the 30 MB Hard Disk Option (97K08440), sets the terminal into CCITT Trellis standards mode and corrects E2XX/OP77 communication compatibility problems	600K26682	XC 7033: 22202 XC 7032: 14141 FC,7033: 100561 FC 7032: 60061 LA 7033: 70329 LA 7032: 70241 RX 7033: 658264	USO R/R PWB: 140K33571 RX R/R PWB: 140K73519 LA R/R PWB: 140K28603 FC R/R PWB: 140K73937 USO G3, XC, LA,PWB: 140K32672 RX G3 PWB: 140K73580

Table 1. Tag/MOD Index Cont:

Tag/MOD and Classification	Description	Kit and Bulletin Numbers	Cut-in Serial Number	Part Number
13 Class 3	Tag 13 contains a modification to Tag 12 (Level 5.19) that corrects a problem with the Diagnostic test pattern (Pattern-A) not being printed at the end of a diagnostic self test on a 7032/7033. Firmware Level A 5.19 corrects this problem.	USO: 600K26683 RX: 499K93461	XC 7033: 25432 XC 7032: 14141 FC 7033: 100661 FC 7032: 60061 LA 7033: 70420 LA 7032: 70241 RX 7033: 658531	USO R/R PWB: 140K33572 RX R/R PWB: 140K32680 LA R/R PWB: 140K28604 FC R/R PWB: 140K73938
14 Class 3	Tag 14 issues Portuguese Language Eprom (Level A5.19 & FT0B 4.0) on RAM/ROM PWB.		Cut-in March 1992	BRA RR PWB: 140K42600
15 Class 3	Tag 15 upgrades Firmware for the RS232 Option. Firmware level 6.01. This level or higher is required for the RS232 Option.	600K26684	Cut-in April 1992	USO R/R PWB: 140K40840 RX R/R PWB: 140K40870 LA R/R PWB: 140K40860 FC R/R PWB: 140K40850 XC, LA,FC G3 PWB: 140K40880 RX G3 PWB: 140K40890 RS 232 PWB: 140K40900

Table 1. Tag/MOD Index Cont:

Tag/MOD and Classification	Description	Kit and Bulletin Numbers	Cut-in Serial Number	Part Number
46 Class 3	Component U12 on RX-CP Coupler PWB changed to correct dial tone detect problem.		RX 7033: 660169	RX G3 PWB: 140K73558
47 Class 3	Coupler PWB firmware upgrade to level 2.02	499K93460	RX 7033: 658295	RX G3 PWB: 140K73557
48 Class 3	Coupler PWB firmware upgrade to level 1.13	----	RX: 655030	RX G3 PWB: 140K73556
49 Class 3	IC change on Main PWB	----	RX: 653969	RX MAIN PWB: 140K79176
50 Class 3	K4 relay on coupler PWA changed. Firmware upgraded to level 1.07.	----	RX: 653969	RX: 140K73554

6.7.2 Assembly and Firmware Matrix

The Assembly and Firmware Matrix (Tables 1 & 2) provides a complete history of all major sub-assemblies.   Tag/MOD numbers, firmware stage and version number/check sum values are included when applicable.

Table 1. Assembly and Firmware Matrix (USO)

Firmware Version	Ram/Rom PWA					G3 PWA	RS232 PWB		Hard Disk Interface PWB		Tag/Mod
	MRO	MR1	MR2	MR3	FT0		DIL	DIM	HD0X	HD1X	
4.58	4.58/CE00	4.58/9200	4.58/3E00	4.58/EF00	4.58/2F00	4.47/2C00	----	----	----	----	----
4.70	4.70/9D00	4.70/7500	4.58/1700	4.58/7300	4.58/6D00	4.59/D600	----	----	----	----	6
4.76	4.76/9400	4.76/AC00	4.76/1800	4.76/0300	4.76/7400	4.66/9600	----	----	4.58/C400	4.58/CF00	8
4.84	4.84/9A00	4.84/4600	4.84/9200	4.84/8300	4.84/7400	4.71/5B00	----	----	4.58/C400	4.58/CF00	9
5.19	5.19/3900	5.19/6900	5.19/0B00	5.19/C600	4.82/7400	5.14/AF00	----	----	4.58/C400	4.58/CF00	12
A519	A5.19/3900	A5.19/6A00	A5.19/0C00	A5.19/C600	4.82/7400	5.14/AF00	----	----	4.58/C400	4.58/C400	13
6.01	6.01/4400	6.01/BB00	6.01/6F00	6.01/B800	6.01/7900	6.01/0E00	2.01/0800	2.01/4400	4.58/C400	4.58/C400	15

Table 2. Assembly and Firmware Matrix (RX)

Firmware Version	Ram/Rom PWA					G3 PWA	RS232 PWB		Hard Disk Interface PWB		Tag/Mod
	MRO	MR1	MR2	MR3	FT0		DIL	DIM	HD0X	HD1X	
6.01	6.01/4C00	6.01/0B00	6.01/ED00	6.01/3100	6.01/7900	6.01/9300	2.01/0800	2.01/4400	4.58/C400	4.58/C400	15

7. Wiring Data

Section Contents

Introduction

This section of the service manual will assist you in repairing the facsimile terminal by identifying the plug/jack locations and wire routing.   You should refer to this section whenever directed by the repair procedures, or repair analysis procedures.

This section is divided into the following subsections.

Subsection 7.1 lists the component designations and all plug/jack connections in the terminal.   It also describes the location of the plug/jacks in the terminal.

Subsection 7.2 provides terminal block diagrams and the wiring diagrams.

Subsection 7.3 contains the wire running list for the terminal plug/jacks. In those cases where the plug/jack signals are the same as other connectors, you are referred to the appropriate connector for signal names.

7.1 Plug/Jack Location

7.1.1 Component Designations

Control panel

Video assembly

Thermal head

Main PWB

RAM/ROM PWB

G3 PWB

Modem PWB

Power supply

Option mother PWB (option)

RS-232 PWB (option)

Encryption I/F PWB (option)

Hard disk drive (option)

Hard disk power supply (option)

Hard disk interface PWB (option)

LAN Fax Server (option)

Coupler PWB **(RX only)**

Telephone line filter PWB **(RX only)**

CAUTION

When disconnecting plugs on the main PWB, use a small screwdriver or pliers to loosen the plugs. Avoid pulling on the wires to separate the connectors.

When connecting plugs on the main PWB, ensure the plug sizes match. Do not force wrong size plugs into the connectors; components will be damaged.

7.1.2 Plug/Jack Index

P/J#	Mounted on	Wiring goes to
MJ1	**(USO only)** G3 PWB	Telephone line cord
P1	Option mother PWB	Main PWB
P2	LAN/Fax Server PWB	Optional Laser Printer
P3	LAN/Fax Server PWB	Modular connection to Network (10 Base T)
P4	LAN/Fax Server PWB	Ethernet Thin cable connection to Network (BNC Cable)
P5	LAN/Fax Server PWB	Ethernet Thick cable to Network (DB-15 connector)
P/J1	LAN/Fax Server PWB	Option mother PWB
P/J2	**(RX only)** Telephone line filter PWB	Coupler PWB
J2	Option mother PWB	Option PWBs
MJ2	**(USO only)** G3 PWB	Handset cord
P/J3	**(RX only)** Coupler PWB	G3 PWB
MJ3	**(RX only)** Coupler PWB	Telephone line filter PWB
J3	Option mother PWB	Option PWBs
P/J32	G3 PWB	Modem PWB
P/J35	**(RX only)** G3 PWB	Coupler PWB
P/J101	Main PWB	Scan position sensor, ADF document sensor, Area #3 jam sensor
P/J102	Main PWB	P/J130 in-line, P/J140 in-line
P/J103	Main PWB	Control panel

P/J#	Mounted on	Wiring goes to
P/J110	Main PWB	P/J194 in-line
P/J111	**(RX only)** Main PWB	A3 document size sensor, donor size sensor
P/J120	In-line, scan motor	Main PWB
P/J121	In-line, printer motor	Main PWB
P/J123	In-line, paper feed motor	Main PWB
P/J130	In-line, nudger solenoid	Main PWB
P/J132	In-line, paper feed solenoid	Main PWB
P/J133	Auxiliary tray paper feed solenoid	P/J194 in-line
P/J140	In-line, scan interlock switch	Main PWB
P/J141	In-line, printer interlock switch	Main PWB
P/J142	In-line, right cover interlock	Main PWB
P/J150	Scan position sensor	Main PWB
P/J151	ADF document sensor	Main PWB
P/J153	Area #3 jam sensor	Main PWB
P/J154	Area #1 jam sensor	Main PWB
P/J155	No paper sensor	Main PWB
P/J156	Thermal head down sensor	Main PWB
P/J157	Area #2 jam sensor	Main PWB
P/J159	Auxiliary tray paper out sensor	P/J194 in-line
P/J160	Paper size sensor	Main PWB
P/J161	In-line, low paper sensor	Main PWB
P/J162	Auxiliary tray paper size sensor	P/J194 in-line

P/J#	Mounted on	Wiring goes to
P/J163	Auxiliary tray low paper sensor	P/J194 in-line
P/J170	**(RX only)** A3 document size sensor	Main PWB
P/J171	B4 document size sensor	Main PWB
P/J180	**(RX only)** Donor size sensor	Main PWB
P/J181	Donor out sensor	Main PWB
P/J190	Control panel	Main PWB
P/J191	In-line, speaker	Main PWB
P/J193	Power supply	Main PWB
P/J194	In-line, from main PWB	Auxiliary tray components
P/J195	Thermal head	Power supply
P/J196	Power supply	Thermal head
P/J197	Video assembly	Main PWB
P/J200	Main PWB	Power supply
J210	Main PWB	RAM/ROM PWB
P210	RAM/ROM PWB	Main PWB
J220	Main PWB	G3 PWB
P220	G3 PWB	Main PWB
J230	Main PWB	Option mother PWB
P250	Memory expansion PWB	Option mother PWB
P260	RS-232 PWB	Option mother PWB
J262	RS-232 PWB	Host
P270	Hard disk interface PWB	Option mother PWB
P/J271	Hard disk interface PWB	Hard disk drive
P/J272	Hard disk interface PWB	Hard disk power supply

P/J#	Mounted on	Wiring goes to
P/J273	Hard disk drive	Hard disk power supply
P/J274	Hard disk power supply	Hard disk drive, hard disk interface PWB
P/J275	Hard disk power supply	Power supply
P/J276	Power supply	Hard disk power supply
P280	Encryption I/F PWB	Option mother PWB
P/J281	Encryption I/F PWB	G3 PWB
P/J282	Encryption I/F PWB	Encryptor
P/J283	Encryption I/F PWB	Modem PWB
P/J300	Main PWB	Power supply
P/J400	Main PWB	Thermal head
P/J401	Thermal head	Main PWB
P/J600	Main PWB	Video assembly

7.1.3 Plug/Jack Location
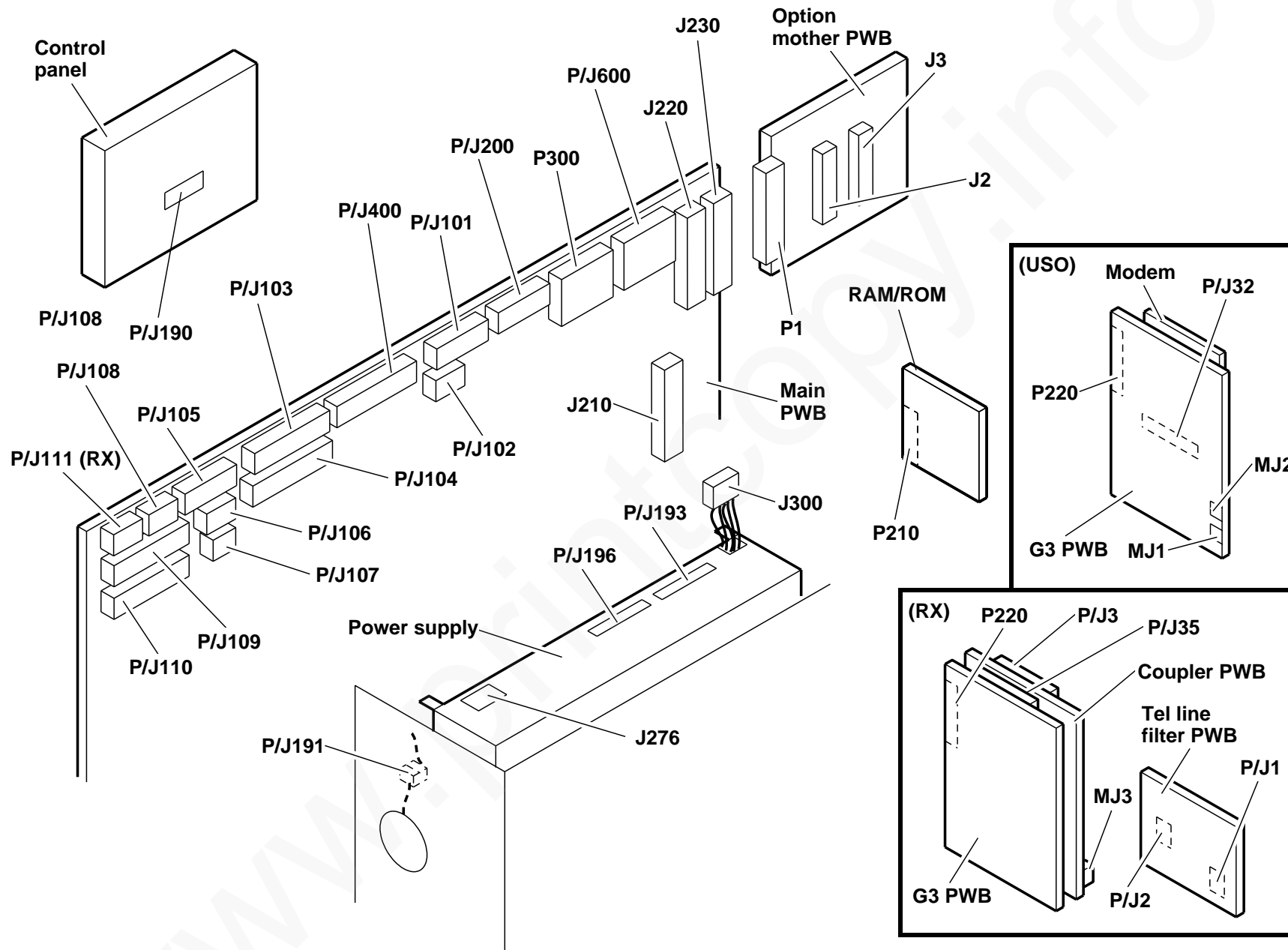
Figure 7-1. Plug/jack location (main PWB, control panel, and electrical box)

7033-350

P/J171
(blue)

P/J170 (RX)
(red)

P/J157

P/J181

P/J180 (RX)

P/J151
(on upper paper
chute assembly)

P/J150
(on upper paper
chute assembly)

P/J197
(bottom of
video assembly)

P/J153
(under upper paper
chute assembly)

**In-line connectors located
behind the rear frame**

P/J130 - Nudger solenoid
P/J120 - Scan motor
P/J140 - Scan interlock switch
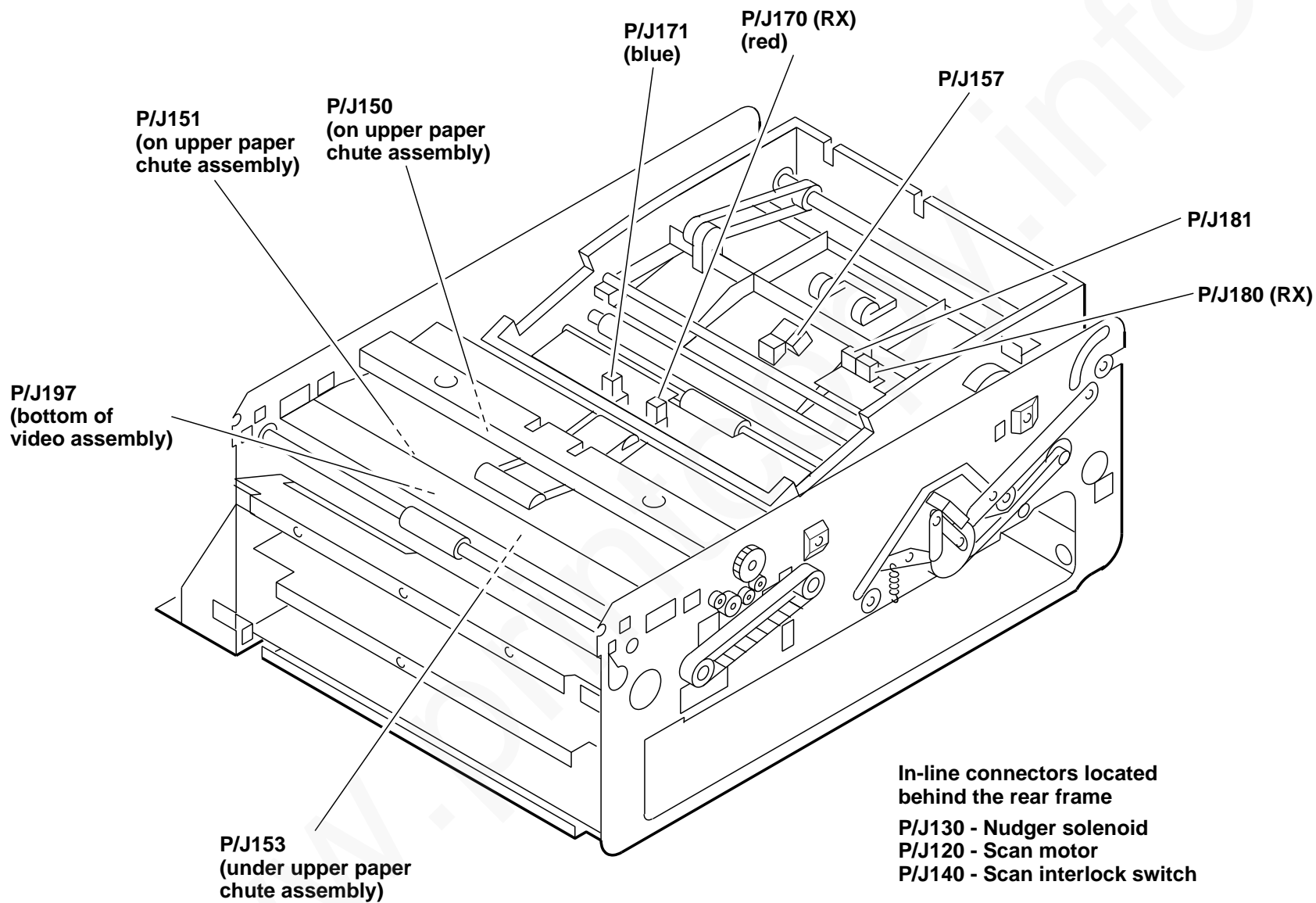
7033-351

Figure 7-2. Plug/jack location (scanner and upper printer area)

**In-line connectors located
behind the rear frame**

P/J161 - Low paper sensor
P/J121 - Printer motor
P/J123 - Paper feed motor
P/J141 - Printer interlock switch
P/J142 - Right cover interlock switch

**P/J155 (behind
rear frame)**

P/J195

**P/J154 (under
paper guide)**

P/J401

P/J155

**P/J156 (inside
front frame)**

**P/J160
(rear paper
tray area)**
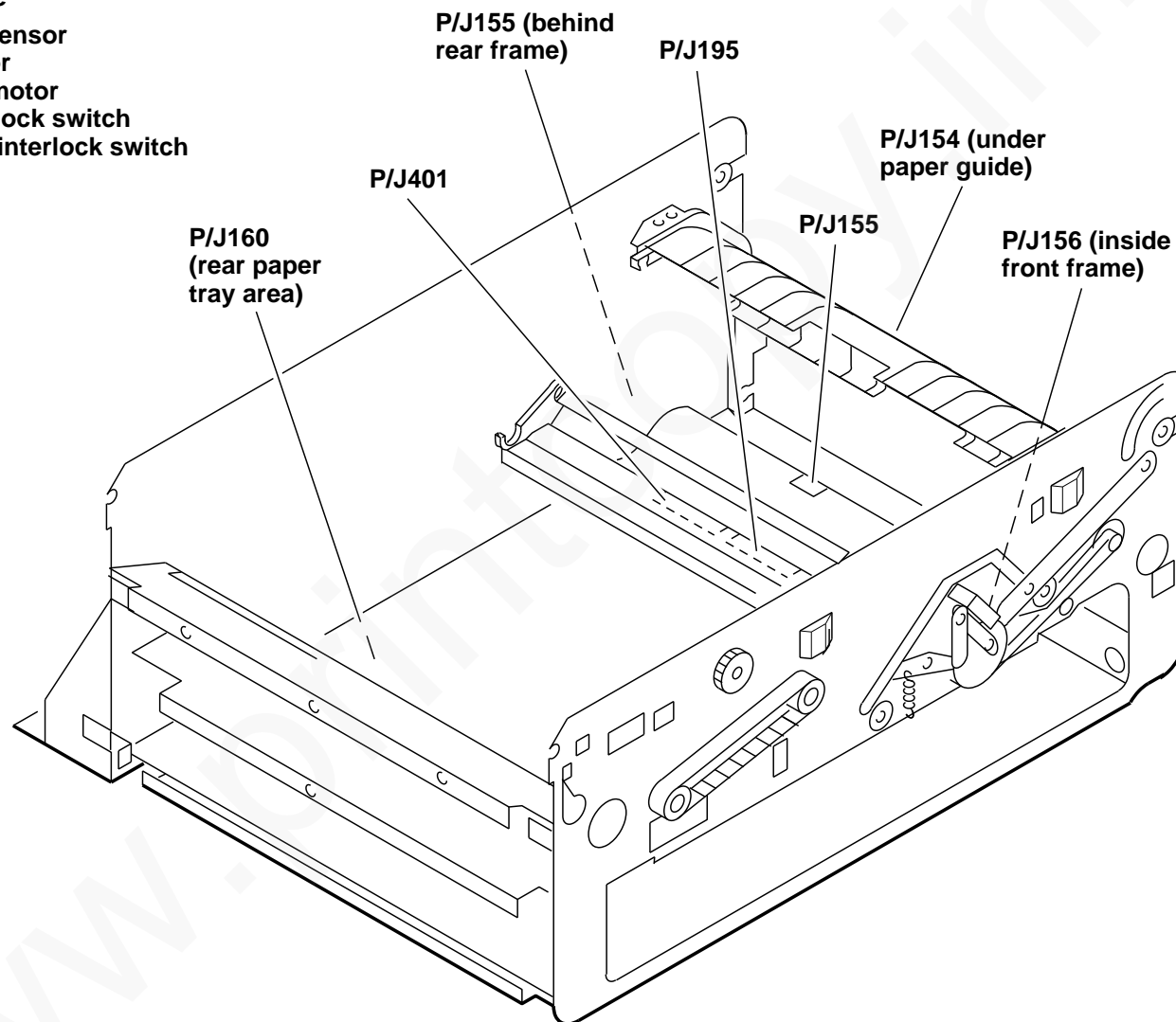
7033-352

Figure 7-3. Plug/jack location (lower printer and paper tray area)
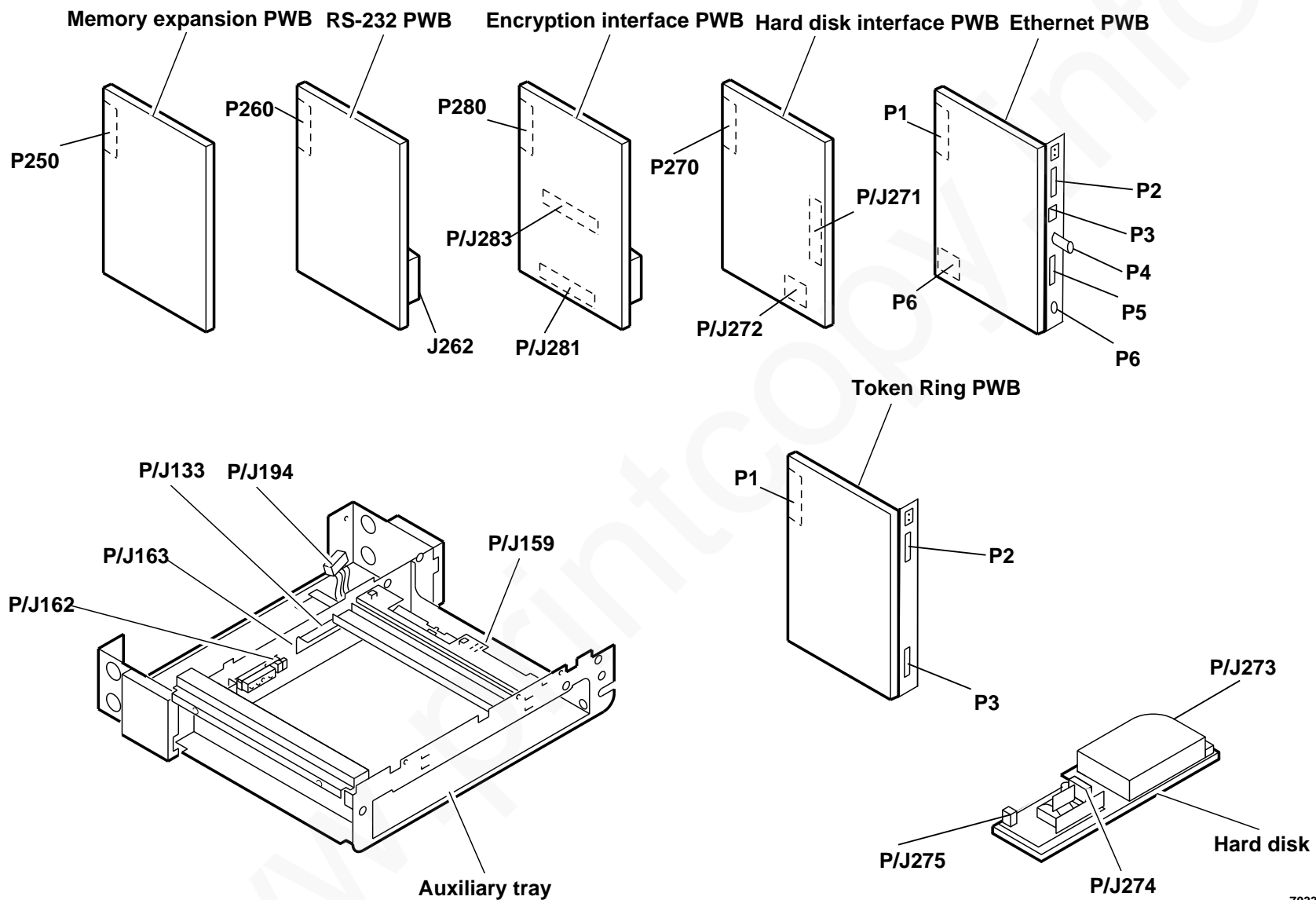
Figure 7-4. Plug/jack location (options)

Memory expansion PWB RS-232 PWB Encryption interface PWB Hard disk interface PWB Ethernet PWB

P250 P260 P280 P270 P1

P/J283 P/J271

P/J281 P/J272 P6

J262 P2 P3 P4 P5 P6

Token Ring PWB

P/J133 P/J194 P1

P/J159

P/J163 P2

P/J162 P3

Auxiliary tray

P/J273

P/J275 P/J274 Hard disk

7033-353

7.2 Wiring Diagrams

7.2.1A Block Diagram, PWBs and Major Components
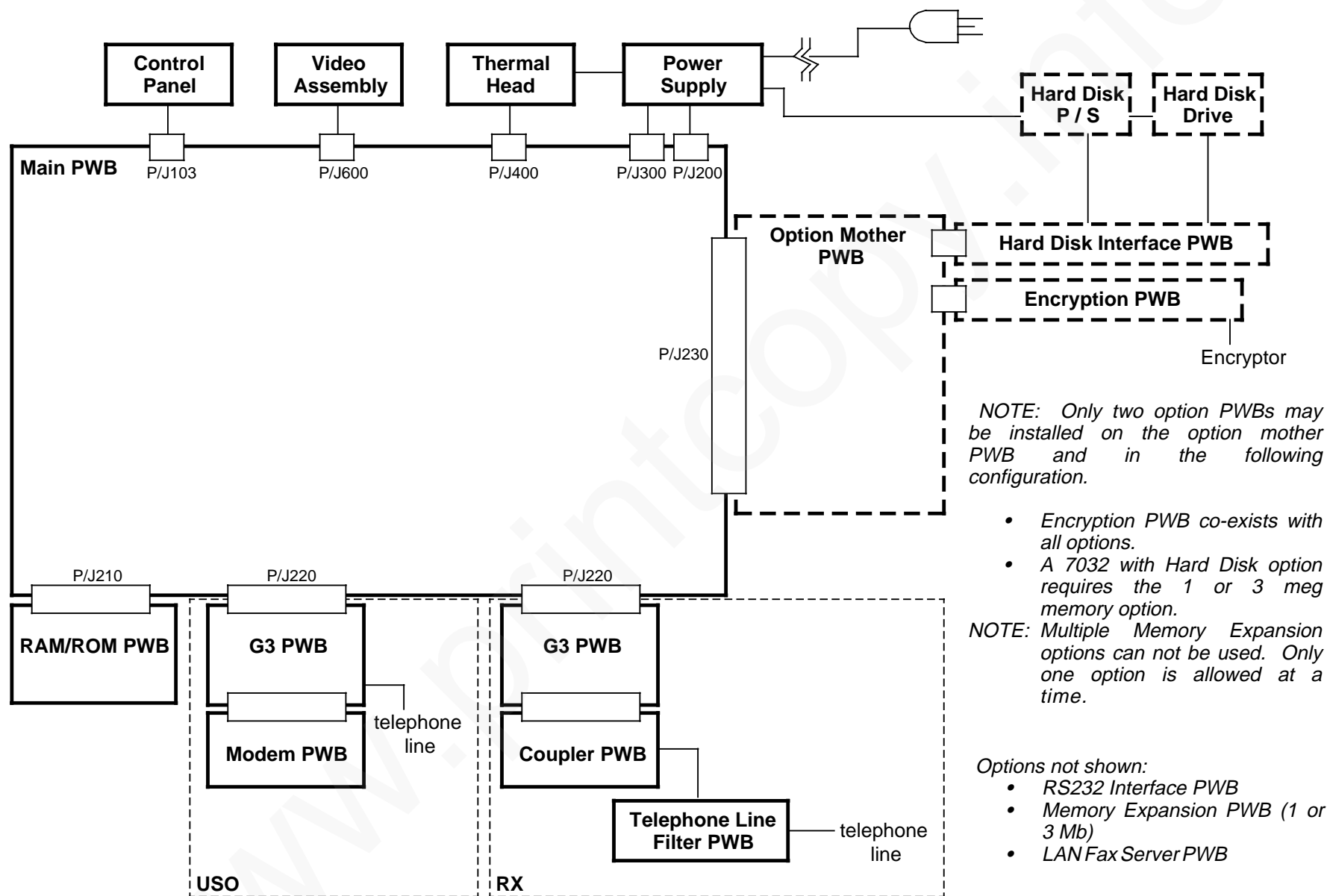
Figure 7-5. Block Diagram, PWBs and Major Components

7.2.1B Block Diagram, Switches/Sensors/Solenoids/Motors
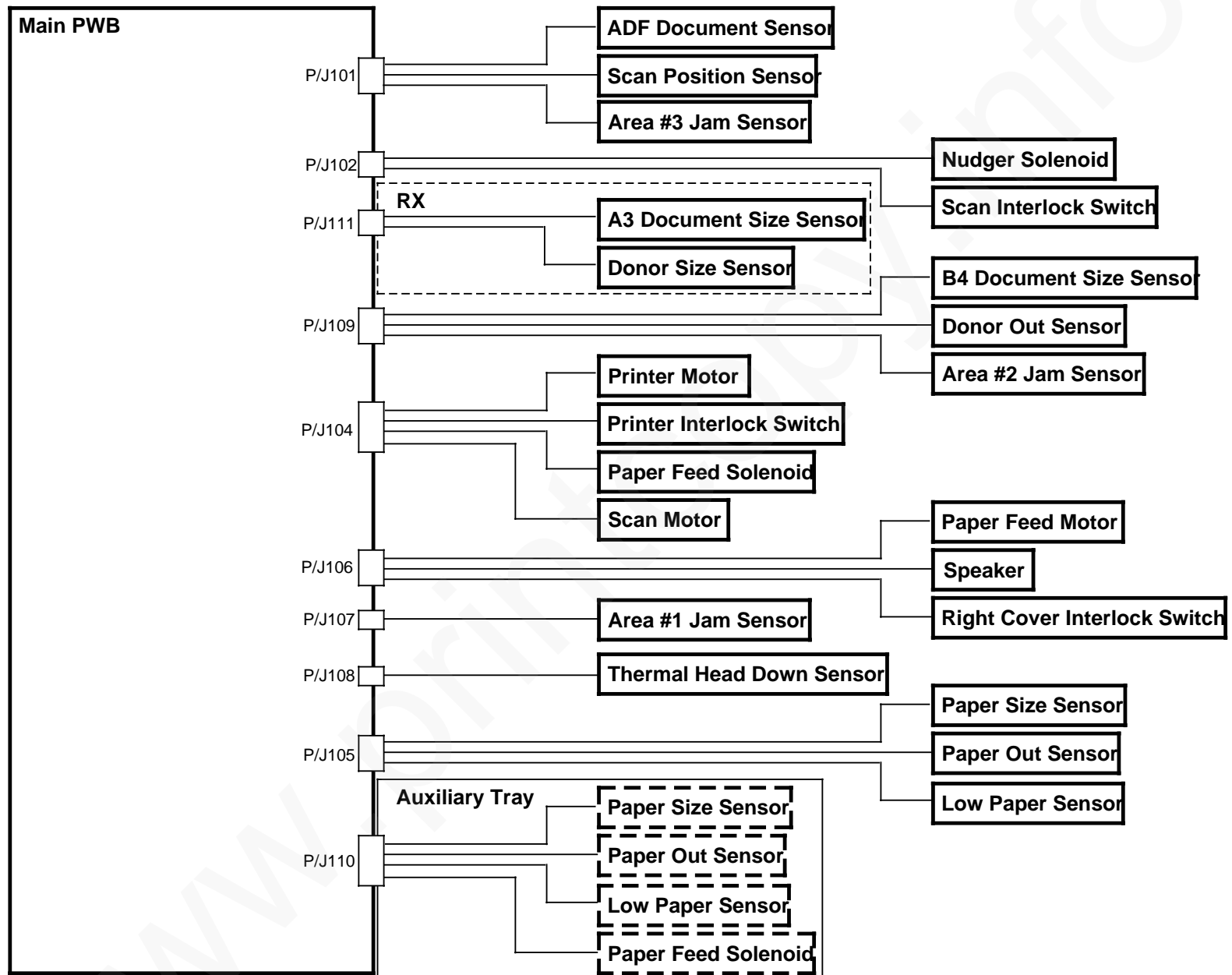
Figure 7-6. Block Diagram, Switches/Sensors/Solenoids/Motors

7.2.2 Analog Ground (AGND)
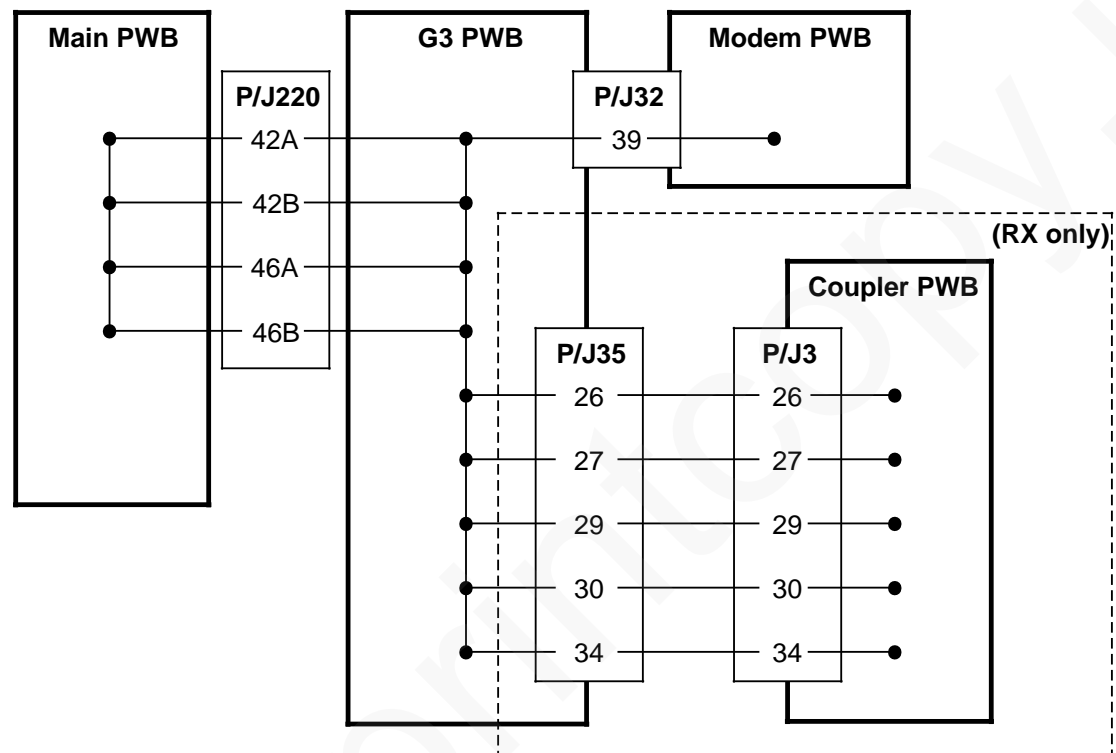
7.2.3 LED Ground (LEDGND)

7.2.4A 5 VDC Ground

Power Supply

AC
- GND
- ACN
- ACH

P/J300
3

Thermal Head

P/J400 / P/J401
- 2 / 2
- 4 / 4
- 6 / 6
- 8 / 8
- 10 / 10
- 16 / 16

RAM/ROM PWB

J210 - P210
- 1A/B
- 2A/B
- 39A/B
- 40A/B

G3 PWB

J220 - P220
- 1A/B
- 2A/B
- 50A/B

Main PWB

Control Panel

P/J103 / P/J190
- 1 / 1
- 3 / 3
- 5 / 5
- 9 / 9
- 10 / 10

Hard Disk Power Supply

P/J274
2

Hard Disk Drive

P/J273
3

Ⓐ

Option Mother PWB

J230 - P1
- 1A/B
- 2A/B
- 50A/B

Option PWB

J2/J3 - P2x0
- 1A/B
- 2A/B
- 50A/B

P250   Memory exapansion
P260   RS-232
P270   Hard disk interface
P280   Encryption I/F
P1   LAN Fax Server Interface

7.2.4B 5 VDC Ground

Main PWB

(A)

P/J101
3 — P/J150 3 — **Scan Position Sensor**
6
9 — P/J151 3 — **ADF Document Sensor**

P/J153 3 — **Area #3 Jam Sensor**

P/J102 6 — P/J140 2 — **Scan Interlock Switch**

P/J104 6 — P/J141 2 — **Printer Interlock Switch**

P/J106 6 — P/J191 2 — **Speaker**
8 — P/J142 2 — **Right Cover Interlock Switch**

P/J107 3 — P/J154 3 — **Area #1 Jam Sensor**

P/J105 5 — P/J160 5 — **Paper Size Sensor**
8 — P/J159 3 — **No Paper Sensor**
10 — P/J161 2 — **Low Paper Sensor**

P/J109 3 — P/J171 1 — **B4 Document Size Sensor**
6 — P/J181 3 — **Donor Out Sensor**
10 — P/J157 3 — **Area #2 Jam Sensor**

(RX only)
P/J111 3 — P/J170 1 — **A3 Document Size Sensor**
6 — P/J180 3 — **Donor Size Sensor**

P/J108 3 — P/J156 3 — **Thermal Head Down Sensor**

P/J110 5
10
12

Auxiliary Tray
P/J194 5 — P/J162 5 — **Paper Size Sensor**
10 — P/J155 3 — **No Paper Sensor**
12 — P/J163 2 — **Low Paper Sensor**

7.2.5 ±12 VDC Ground

7.2.6 24 VDC Ground

7.2.7 A5 VDC Distribution

Power Supply — AC: GND, ACN, ACH

P/J300: 4, 10, 11

P/J400: 25, 26 → P/J401 (Thermal Head): 25, 26

P/J600: 12 → P/J197 (Video Assembly): 12

RAM/ROM PWB — J210 - P210: 3A/B, 4A/B, 37A/B, 38A/B

Main PWB

Option Mother PWB — J230 - P1: 3A/B, 4A/B

Option PWB — J2/J3 - P2x0: 3A/B, 4A/B

P250 Memory expansion
P260 RS-232
P270 Hard disk interface
P280 Encryption I/F
 P1   LAN Fax Server I/F

G3 PWB — J220 - P220: 3A/B, 4A/B

Modem PWB — P/J32: 3, 4

(RX only) — P/J35: 4, 22, 24

Coupler PWB — P/J3: 4, 22, 24

7.2.7B 5 VDC Distribution

7.2.8 12 VDC Distribution
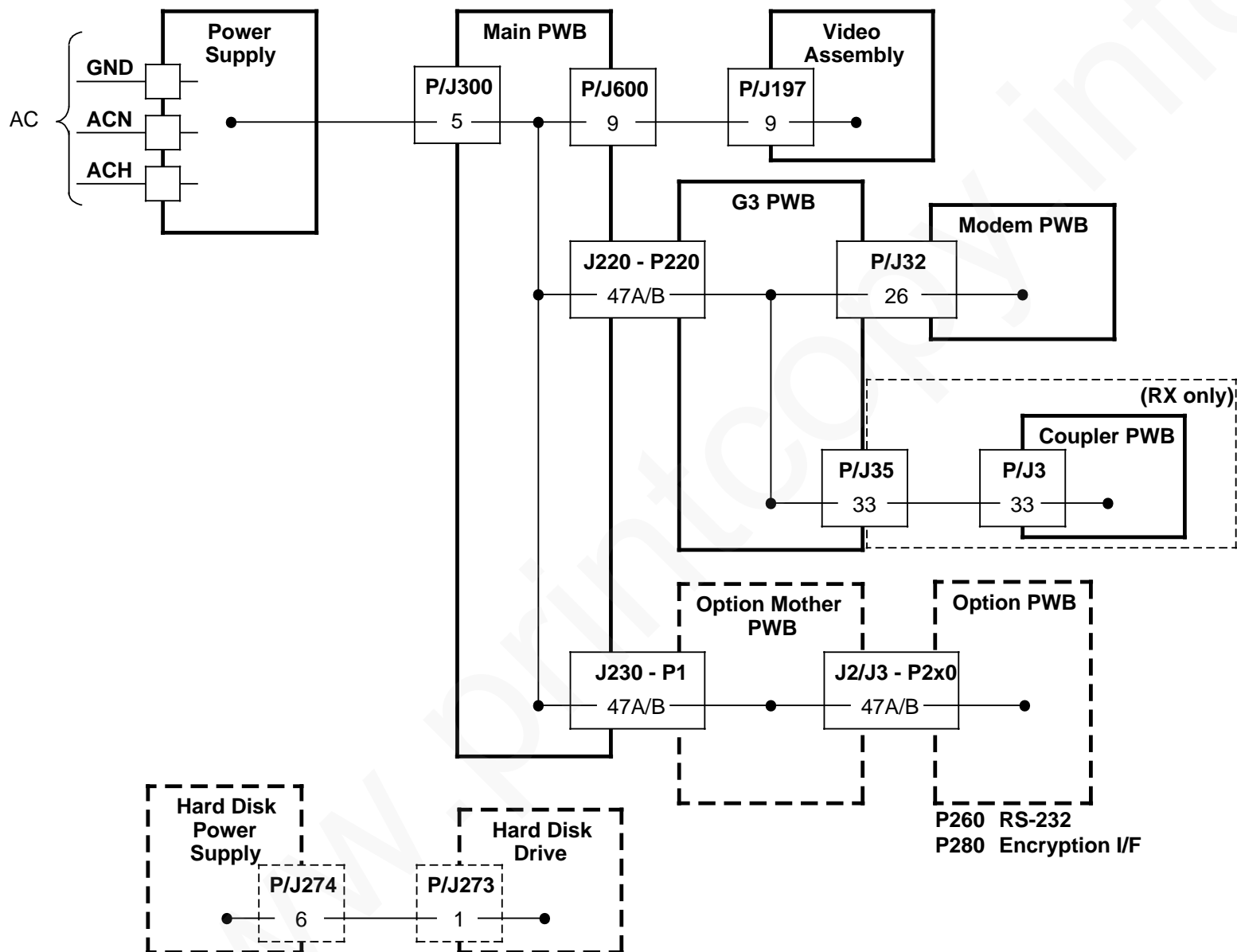
7.2.9 –12 VDC Distribution
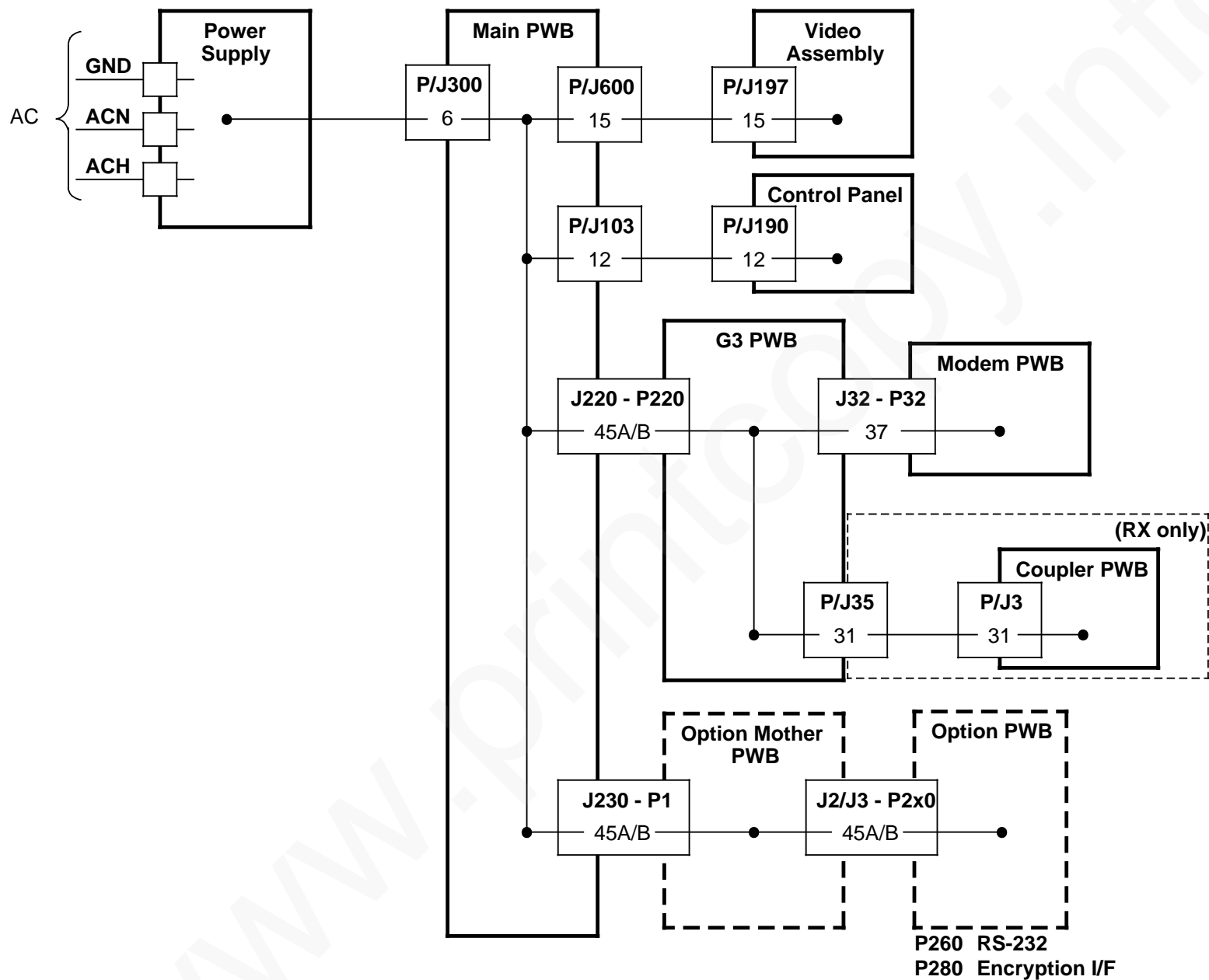
7.2.10   24 VDC Distribution
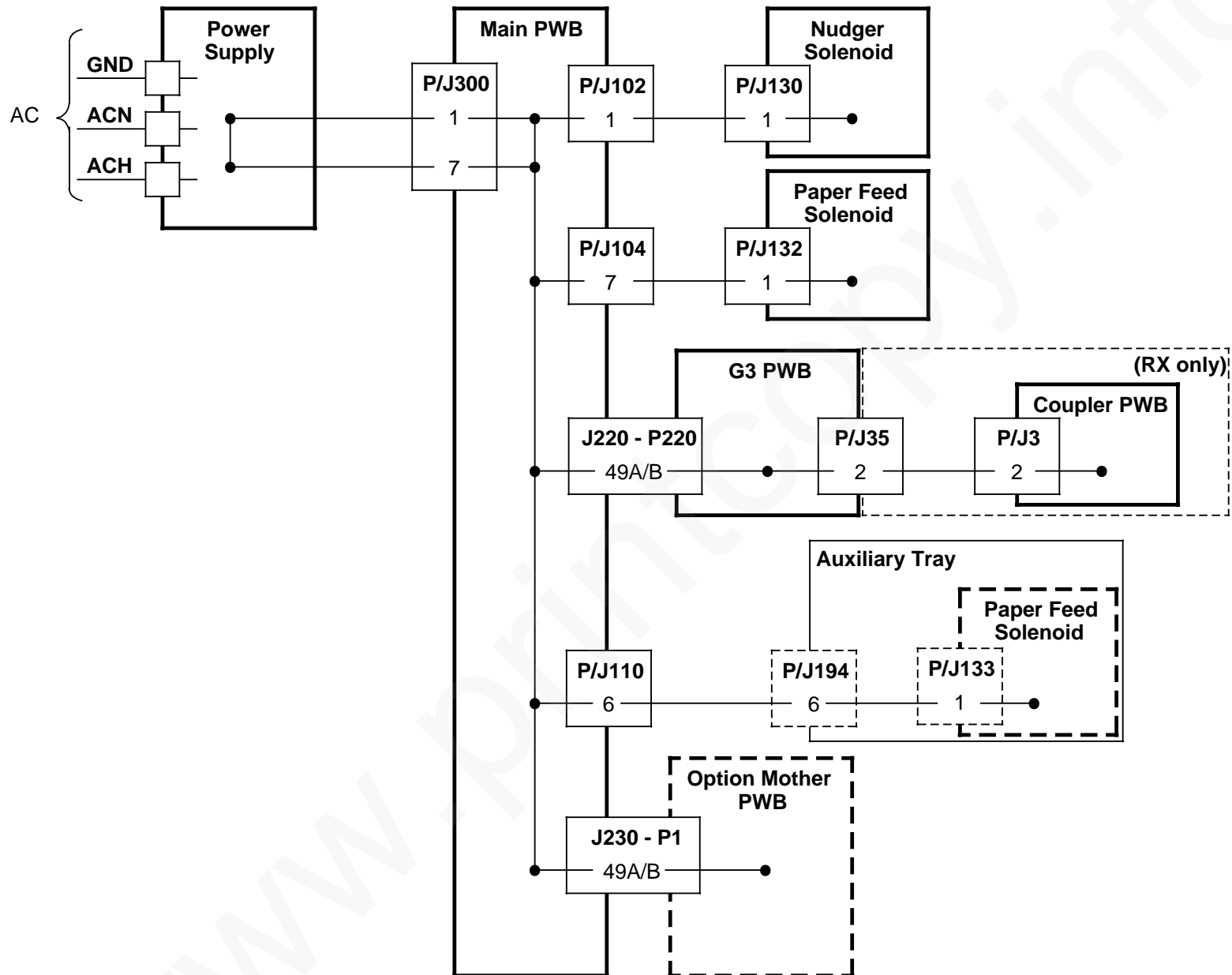
7.2.11   12 VDC Distribution LAN Fax Server

```
          External                    LAN Fax
          Power                       Server
          Supply                      PWB

   GND                  +12v           P6
                                        2
AC ACN

   ACH                   GND           P6
                                        1
```
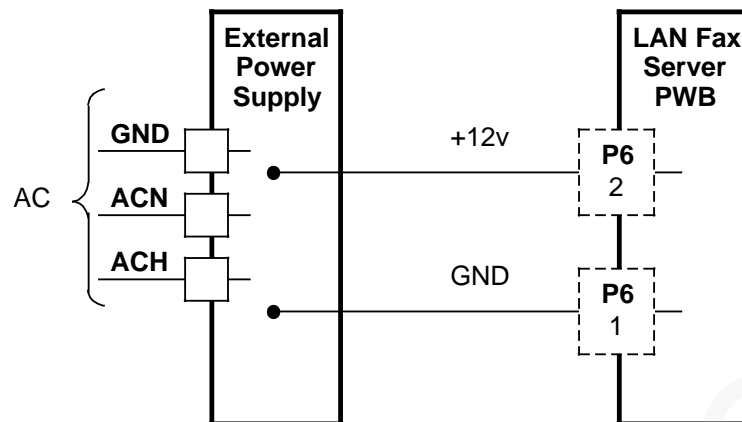
7.3 Wire Running List

P/J1 (RX only - UK)
   From: Telephone line filter PWB
   To: Telephone line cord

Pin #	Signal Name
1	GND
2	L1
3	BEL
4	L2

P/J1 (RX only)
   From: Telephone line filter PWB
   To: Telephone line cord

Pin #	Signal Name
1	GND
2	L1
3	BEL
4	L2
5	T1
6	T2

MJ1 (USO only)
   From: G3 PWB
   To: Telephone line cord

Pin #	Signal Name
1	A1
2	L1
3	L2
4	A

P1
   From: Option mother PWB
   To: Main PWB

Pin #	Signal Name
1A	5 VDC GND
1B	5 VDC GND
2A	5 VDC GND
2B	5 VDC GND
3A	5 VDC
3B	5 VDC
4A	5 VDC
4B	5 VDC
5A	MD1
5B	MD0
6A	MD3
6B	MD2
7A	MD5
7B	MD4
8A	MD7
8B	MD6
9A	MD9
9B	MD8
10A	MD11
10B	MD10
11A	MD13
11B	MD12
12A	MD15
12B	MD14
13A	LENL
13B	HENL
14A	MA2
14B	MA1
15A	MA4
15B	MA3
16A	MA6
16B	MA5
17A	MA8
17B	MA7

P1 (continued)

Pin #	Signal Name
18A	MA10
18B	MA9
19A	MA12
19B	MA11
20A	MA14
20B	MA13
21A	MA16
21B	MA15
22A	MA18
22B	MA17
23A	MA20
23B	MA19
24A	MA22
24B	MA21
25A	RDOPL
25B	MA23
26A	MST0
26B	ENCL
27A	MST2
27B	MST1
28A	MAS
28B	MS/U
29A	MLDS
29B	MR/W
30A	OPCS
30B	MHDS
31A	DRCS
31B	G3MCS
32A	OPRST0
32B	SRCS
33A	OPRST2
33B	OPRST1
34A	OPRST4
34B	OPRST3
35A	OPINT1
35B	OPINT0

P1 (continued)

Pin #	Signal Name
36A	OPINT3
36B	OPINT2
37A	WAIT
37B	OPINT4
38A	ODRHWR
38B	ODRLWR
39A	SSACK
39B	SSREQ
40A	NC0
40B	SSDONE
41A	NC1
41B	DIR
42A	±12 VDC GND
42B	±12 VDC GND
43A	- - -
43B	- - -
44A	- - -
44B	- - -
45A	−12 VDC
45B	−12 VDC
46A	±12 VDC GND
46B	±12 VDC GND
47A	12 VDC
47B	12 VDC
48A	- - -
48B	- - -
49A	- - -
49B	- - -
50A	5 VDC GND
50B	5 VDC GND

P1
From: Ethernet PWB
To: Option mother PWB

Pin #	Signal Name
1	5 VDC GND
2	5 VDC GND
3	5 VDC
4	5 VDC
5	DB1
6	DB3
7	DB5
8	DB7
9	DB9
10	DB11
11	DB13
12	DB15
13	- - -
14	AB2
15	AB4
16	AB6
17	AB8
18	AB10
19	AB12
20	AB14
21	AB16
22	AB18
23	AB20
24	- - -
25	BRDOP
26	- - -
27	- - -
28	BAS
29	- - -
30	OPCS
31	- - -
32	- - -
33	- - -
34	

P1 (continued)

Pin #	Signal Name
35	- - -
36	OPINT3
37	BWAIT
38	- - -
39	- - -
40	- - -
41	- - -
42	GND
43	- - -
44	- - -
45	- - -
46	GND
47	- - -
48	- - -
49	- - -
50	GND
51	GND
52	GND
53	5 VDC
54	5 VDC
55	DB0
56	DB2
57	DB4
58	DB6
59	DB8
60	DB10
61	DB12
62	DB14
63	HENL
64	AB1
65	AB3
66	AB5
67	AB7
68	AB9
69	AB11
70	AB13

P1 (continued)P1 Ethernet PWB)

Pin #	Signal Name
71	AB15
72	AB17
73	AB19
74	AB21
75	- - -
76	- - -
77	- - -
78	- - -
79	BR_W
80	- - -
81	- - -
82	- - -
83	- - -
84	PRWUPRST
85	- - -
86	- - -
87	- - -
88	- - -
89	- - -
90	- - -
91	- - -
92	GND
93	- - -
94	- - -
95	- - -
96	GND
97	- - -
98	- - -
99	- - -
100	GND

P2
From: Ethernet PWB DB 25
To: Optional Laser Printer)

Pin #	Signal Name
1	P1 STROBE
2	P1 DATA 0
3	P1 DATA 1
4	P1 DATA 2
5	P1 DATA 3
6	P1 DATA 4
7	P1 DATA 5
8	P1 DATA 6
9	P1 DATA 7
10	- - -
11	P1 BUSY
12	P1 PE
13	P1 SELECT
14	P1 AUTO FD
15	P1 ER
16	P1 RESET
17	P1 SELECT IN
18	GND
19	GND
20	GND
21	GND
22	GND
23	GND
24	GND
25	GND

P3
From: Ethernet PWB RJ45
To: LAN Network)

Pin #	Signal Name
1	TWSTTDP
2	TWSTTTDN
3	TWSTRDP
4	TWSTRDN

P4
From: Ethernet PWB Coax BNC
To: LAN Network)

Pin #	Signal Name
1	ENETRX_TX TIP
2	CASE GND

P5
From: Ethernet PWB DB 15 AIU
To: LAN Network

Pin #	Signal Name
1	GND
2	AUI-COLP
3	AUI-TXP
4	GND
5	AUI-RXP
6	GND
7	- - -
8	- - -
9	AUI-COLN
10	AUI-TXN
11	GND
12	AUI-RXN
13	AUI-12
14	GND
15	- - -

P/J2 (RX only)
From: Telephone line filter PWB
To: Coupler PWB

Pin #	Signal Name
1	L1
2	L2
3	T1
4	T2
5	- - -
6	- - -
7	- - -
8	- - -
9	- - -
10	- - -

J2
From: Option mother PWB
To: Option PWBs

Pin #	Signal Name
1A	5 VDC GND
1B	5 VDC GND
2A	5 VDC GND
2B	5 VDC GND
3A	5 VDC
3B	5 VDC
4A	5 VDC
4B	5 VDC
5A	D1
5B	D0
6A	D3
6B	D2
7A	D5
7B	D4
8A	D7
8B	D6
9A	D9
9B	D8
10A	D11
10B	D10
11A	D13
11B	D12
12A	D15
12B	D14
13A	LENL
13B	HENL
14A	MA2
14B	A1
15A	A4
15B	A3
16A	A6
16B	A5
17A	A8
17B	A7

J2 (continued)

Pin #	Signal Name
18A	A10
18B	A9
19A	A12
19B	A11
20A	A14
20B	A13
21A	A16
21B	A15
22A	A18
22B	A17
23A	A20
23B	A19
24A	A22
24B	A21
25A	RDOPL
25B	A23
26A	ST0
26B	ENCL
27A	ST2
27B	ST1
28A	AS
28B	S/U
29A	LDS
29B	R/W
30A	OPCS
30B	HDS
31A	DRCS
31B	G3MCS
32A	OPRST0
32B	SRCS
33A	OPRST2
33B	OPRST1
34A	OPRST4
34B	OPRST3
35A	OPINT1

J2 (continued)

Pin #	Signal Name
35B	OPINT0
36A	OPINT3
36B	OPINT2
37A	WAIT
37B	OPINT4
38A	ODRHWR
38B	ODRLWR
39A	SSACK
39B	SSREQ
40A	NC0
40B	SSDONE
41A	NC1
41B	DIR
42A	±12 VDC GND
42B	±12 VDC GND
43A	- - -
43B	- - -
44A	- - -
44B	- - -
45A	−12 VDC
45B	−12 VDC
46A	±12 VDC GND
46B	±12 VDC GND
47A	12 VDC
47B	12 VDC
48A	- - -
48B	- - -
49A	- - -
49B	- - -
50A	5 VDC GND
50B	5 VDC GND

MJ2 (USO only)
From: G3 PWB
To: Handset cord

Pin #	Signal Name
1	A1
2	T1
3	T2
4	A

P/J3 (RX only)
From: Coupler PWB
To: G3 PWB

Pin #	Signal Name
1	24 VDC GND
2	24 VDC
3	GND
4	5 VDC
5	MD1
6	MD0
7	MD3
8	MD2
9	MD5
10	MD4

P/J3 (continued)

Pin #	Signal Name
11	MD7
12	MD6
13	ECSL
14	MA0
15	R31L
16	MA1
17	GND
18	IORDL
19	GND
20	IOWRL
21	GND
22	5 VDC
23	RXDB
24	5 VDC
25	TXDB
26	AGND
27	AGND
28	MODRX
29	AGND
30	AGND
31	−12 VDC
32	TXA
33	12 VDC
34	AGND

MJ3 - Refer to P/J2 (RX only)
From: Coupler PWB
To: Telephone line filter PWB

J3 - Refer to J2
  From: Option mother PWB
  To: Option PWBs

P/J32
  From: G3 PWB
  To: Modem PWB

Pin #	Signal Name
1	IORDH
2	IOWRL
3	5 VDC
4	5 VDC
5	MD6
6	FCSO
7	MD7
8	MA2
9	MD5
10	MA0
11	- - -
12	- - -
13	DCLK
14	GND
15	MD3
16	RLSD
17	CS
18	FCS1
19	RTS
20	TXD
21	RXD
22	XCLK
23	MD1
24	- - -
25	- - -
26	12 VDC
27	MA1
28	MD2
29	MD0
30	MA3

P/J32 (continued)

Pin #	Signal Name
31	MD4
32	MIRQ
33	CBS1
34	CBS2
35	- - -
36	MPOR
37	−12 VDC
38	TXA
39	AGND
40	RXA

P/J35 - Refer to P/J3 (RX only)
  From: G3 PWB
  To: Coupler PWB

P/J101
  From: Main PWB
  To: Scan position sensor, ADF document sensor, Area #3 jam sensor

Pin #	Signal Name
1	5 VDC
2	SCPSEH
3	5 VDC GND
4	5 VDC
5	DOCMTH
6	5 VDC GND
7	5 VDC
8	PJAM1L
9	5 VDC GND

P/J102
  From: Main PWB
  To: P/J130 in-line, P/J140 in-line

Pin #	Signal Name
1	24 VDC
2	NUDSOL
3	- - -
4	- - -
5	INTSCH
6	5 VDC GND

P/J103
  From: Main PWB
  To: Control panel

Pin #	Signal Name
1	5 VDC GND
2	CPTXD
3	5 VDC GND
4	CPRXD
5	5 VDC GND
6	CPRTL
7	5 VDC
8	5 VDC
9	5 VDC GND
10	5 VDC GND
11	±12 VDC GND
12	−12 VDC

P/J104
   From: Main PWB
   To: P/J121 in-line, P/J141 in-line, P/J132 in-
      line, P/J120 in-line

Pin #	Signal Name
1	PRMAA
2	PRMAB
3	PRMBA
4	PRMBB
5	INTPRH
6	5 VDC GND
7	24 VDC
8	PCUSOL
9	SCMAA
10	SCMAB
11	SCMBA
12	SCMBB
13	- - -

P/J105
   From: Main PWB
   To: Paper size sensor, no paper sensor,
      P/J161 in-line

Pin #	Signal Name
1	PWB40H
2	PLB40H
3	PLA40H
4	PLB50H
5	5 VDC GND
6	5 VDC
7	NOPUPL
8	5 VDC GND
9	LWPUPL
10	5 VDC GND

P/J106
   From: Main PWB
   To: P/J123 in-line, P/J191 in-line, P/J142 in-
      line

Pin #	Signal Name
1	FFMAA
2	FFMAB
3	FFMBA
4	FFMBB
5	ALARM
6	5 VDC GND
7	INTPIH
8	5 VDC GND

P/J107
   From: Main PWB
   To: Area #1 jam sensor

Pin #	Signal Name
1	5 VDC
2	PSNENL
3	5 VDC GND
4	- - -

P/J108
   From: Main PWB
   To: Thermal head down sensor

Pin #	Signal Name
1	5 VDC
2	REVSTH
3	5 VDC GND

P/J109
   From: Main PWB
   To: B4 document size sensor, donor out
      sensor, Area #2 jam sensor

Pin #	Signal Name
1	5 VDC
2	DOCXC
3	5 VDC GND
4	5 VDC
5	ANXC
6	5 VDC GND
7	NODSNL
8	5 VDC
9	PRPSEL
10	5 VDC GND
11	- - -
12	- - -
13	- - -
14	- - -

P/J110
  From: Main PWB
  To: P/J194 in-line

Pin #	Signal Name
1	PWB41H
2	PLB41H
3	PLA41H
4	PWB51H
5	5 VDC GND
6	24 VDC
7	PCLSOL
8	5 VDC
9	NOPLWL
10	5 VDC GND
11	LWPLWL
12	5 VDC GND
13	- - -
14	- - -
15	- - -

P/J111 (RX only)
  From: Main PWB
  To: A3 document size sensor, donor size sensor

Pin #	Signal Name
1	5 VDC
2	DOCFX
3	5 VDC GND
4	5 VDC
5	ANFX
6	5 VDC GND
7	DB4SNH

P/J120 in-line
  From: Scan motor
  To: Main PWB

Pin #	Signal Name
1	SCMAA
2	SCMAB
3	SCMBA
4	SCMBB

P/J121 in-line
  From: Printer motor
  To: Main PWB

Pin #	Signal Name
1	PRMAA
2	PRMAB
3	PRMBA
4	PRMBB

P/J123 in-line
  From: Paper feed motor
  To: Main PWB

Pin #	Signal Name
1	FFMAA
2	FFMAB
3	FFMBA
4	FFMBB

P/J130 in-line
  From: Nudger solenoid
  To: Main PWB

Pin #	Signal Name
1	24 VDC
2	NUDSOL

P/J132 in-line
  From: Paper feed solenoid
  To: Main PWB

Pin #	Signal Name
1	24 VDC
2	PCUSOL

P/J133 in-line
  From: Auxiliary tray paper feed solenoid
  To: P/J194 in-line

Pin #	Signal Name
1	24 VDC
2	PCLSOL

P/J140 in-line
  From: Scan interlock switch
  To: Main PWB

Pin #	Signal Name
1	INTSCH
2	5 VDC GND

P/J141 in-line
  From: Printer interlock switch
  To: Main PWB

Pin #	Signal Name
1	INTPRH
2	5 VDC GND

P/J142 in-line
  From: Right cover interlock switch
  To: Main PWB

Pin #	Signal Name
1	INTPIH
2	5 VDC GND

P/J150
   From: Scan position sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	SCPSEH
3	5 VDC GND

P/J151
   From: ADF document sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	DOCMTH
3	5 VDC GND

P/J153
   From: Area #3 jam sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	PJAM1L
3	5 VDC GND

P/J154
   From: Area #1 jam sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	PSNENL
3	5 VDC GND
4	- - -

P/J155
   From: No paper sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	NOPUPL
3	5 VDC GND

P/J156
   From: Thermal head down sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	REVSTH
3	5 VDC GND

P/J157
   From: Area #2 jam sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	PRPSEL
3	5 VDC GND

P/J159
   From: Auxiliary tray no paper sensor
   To: P/J194 in-line

Pin #	Signal Name
1	5 VDC
2	NOPLWL
3	5 VDC GND

P/J160
   From: Paper size sensor
   To: Main PWB

Pin #	Signal Name
1	PWB40H
2	PLB40H
3	PLA40H
4	PWB50H
5	5 VDC GND

P/J161 in-line
   From: Low paper sensor
   To: Main PWB

Pin #	Signal Name
1	LWPUPL
2	5 VDC GND

P/J162
   From: Auxiliary tray paper size sensor
   To: P/J194 in-line

Pin #	Signal Name
1	PWB41H
2	PLB41H
3	PLA41H
4	PWB51H
5	5 VDC GND

P/J163
   From: Auxiliary tray low paper sensor
   To: P/J194 in-line

Pin #	Signal Name
1	LWPLWL
2	5 VDC GND

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P/J170 (RX only)
   From: A3 document size sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	DOCFX
3	5 VDC GND

P/J171
   From: B4 document size sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	DOCXC
3	5 VDC GND

P/J180 (RX only)
   From: Donor size sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	ANFX
3	5 VDC GND
4	DB4SNH

P/J181
   From: Donor out sensor
   To: Main PWB

Pin #	Signal Name
1	5 VDC
2	ANXC
3	5 VDC GND
4	NODSNL

P/J190 - Refer to P/J103
   From: Control panel
   To: Main PWB

P/J191 in-line
   From: Speaker
   To: Main PWB

Pin #	Signal Name
1	ALARM
2	5 VDC GND

P/J193 - Refer to P/J200
   From: Power supply
   To: Main PWB

P/J194 in-line
   From: Main PWB
   To: Auxiliary tray components

Pin #	Signal Name
1	PWB41H
2	PLB41H
3	PLA41H
4	PWB51H
5	5 VDC GND
6	24 VDC
7	PCLSOL
8	5 VDC
9	NOPLWL
10	5 VDC GND
11	LWPLWL
12	5 VDC GND
13	- - -
14	- - -
15	- - -

P/J195 - Refer to P/J194
   From: Thermal head
   To: Power supply

P/J196
   From: Power supply
   To: Thermal head

Pin #	Signal Name
1	GNDH
2	GNDH
3	GNDH
4	GNDH
5	GNDH
6	GNDH
7	GNDH
8	VH
9	VH
10	VH
11	VH
12	VH
13	VH
14	VH

P/J197 - Refer to P/J600
    From: Video assembly
    To: Main PWB

P/J200
    From: Main PWB
    To: Power supply

Pin #	Signal Name
1	LEDONL
2	- - -
3	FANON
4	PWINT
5	THON
6	TM10
7	TM20
8	TR10
9	TR20

J210
    From: Main PWB
    To: RAM/ROM PWB

Pin #	Signal Name
1A	5 VDC GND
1B	5 VDC GND
2A	5 VDC GND
2B	5 VDC GND
3A	5 VDC
3B	5 VDC
4A	5 VDC
4B	5 VDC
5A	- - -
5B	- - -
6A	EIO2
6B	EIO1
7A	EIO4
7B	EIO3
8A	EBSYL
8B	EINIL
9A	PWONH
9B	ECLK
10A	RTIL
10B	RTCSL
11A	- - -
11B	- - -
12A	- - -
12B	- - -
13A	MD1
13B	MD0
14A	MD3
14B	MD2
15A	MD5
15B	MD4
16A	MD7
16B	MD6
17A	MD9
17B	MD8

J210 (continued)

Pin #	Signal Name
18A	MD11
18B	MD10
19A	MD13
19B	MD12
20A	MD15
20B	MD14
21A	HDRDL
21B	LDRDL
22A	HDWRL
22B	LDWRL
23A	MA2
23B	MA1
24A	MA4
24B	MA3
25A	MA6
25B	MA5
26A	MA8
26B	MA7
27A	MA10
27B	MA9
28A	MA12
28B	MA11
29A	MA14
29B	MA13
30A	MA16
30B	MA15
31A	MA18
31B	MA17
32A	MA20
32B	MA19
33A	SMCS1
33B	SMCS0
34A	CGCSL
34B	SMCS2
35A	MPCS1
35B	MPCS0

J210 (continued)

Pin #	Signal Name
36A	- - -
36B	- - -
37A	5 VDC
37B	5 VDC
38A	5 VDC
38B	5 VDC
39A	5 VDC GND
39B	5 VDC GND
40A	5 VDC GND
40B	5 VDC GND

P210 - Refer to J210
   From: RAM/ROM PWB
   To: Main PWB

J220
   From: Main PWB
   To: G3 PWB

Pin #	Signal Name
1A	GND
1B	GND
2A	GND
2B	GND
3A	5 VDC
3B	5 VDC
4A	5 VDC
4B	5 VDC
5A	D1
5B	D0
6A	D3
6B	D2
7A	D5
7B	D4
8A	D7
8B	D6

J220 (continued)

Pin #	Signal Name
9A	- - -
9B	- - -
10A	- - -
10B	- - -
11A	- - -
11B	- - -
12A	- - -
12B	- - -
13A	G3INL
13B	- - -
14A	A2
14B	A1
15A	A4
15B	A3
16A	A6
16B	A5
17A	A8
17B	A7
18A	A10
18B	A9
19A	- - -
19B	A11
20A	- - -
20B	- - -
21A	- - -
21B	- - -
22A	- - -
22B	- - -
23A	- - -
23B	- - -
24A	- - -
24B	- - -
25A	- - -
25B	- - -
26A	- - -
26B	ENCL

J220 (continued)

Pin #	Signal Name
27A	- - -
27B	- - -
28A	- - -
28B	- - -
29A	- - -
29B	- - -
30A	- - -
30B	- - -
31A	- - -
31B	G3MCS
32A	OPRST0
32B	- - -
33A	- - -
33B	- - -
34A	- - -
34B	- - -
35A	- - -
35B	OPINT0
36A	- - -
36B	- - -
37A	WAIT
37B	- - -
38A	- - -
38B	- - -
39A	- - -
39B	- - -
40A	- - -
40B	- - -
41A	LDRDL
41B	LDWRL
42A	AGND
42B	AGND
43A	- - -
43B	- - -
44A	- - -
44B	- - -

J220 (continued)

Pin #	Signal Name
45A	–12 VDC
45B	–12 VDC
46A	AGND
46B	AGND
47A	12 VDC
47B	12 VDC
48A	24 VDC GND
48B	24 VDC GND
49A	24 VDC
49B	24 VDC
50A	GND
50B	GND

P220 - Refer to J220
  From: G3 PWB
  To: Main PWB

J230 - Refer to P1
  From: Main PWB
  To: Option mother PWB

P250
  From: Memory expansion PWB
  To: Option mother PWB

Pin #	Signal Name
1A	GND
1B	GND
2A	GND
2B	GND
3A	5 VDC
3B	5 VDC
4A	5 VDC
4B	5 VDC
5A	D1
5B	D0
6A	D3
6B	D2
7A	D5
7B	D4
8A	D7
8B	D6
9A	D9
9B	D8
10A	D11
10B	D10
11A	D13
11B	D12
12A	D15
12B	D14
13A	- - -
13B	- - -
14A	A2
14B	A1
15A	A4
15B	A3
16A	A6
16B	A5

P250 (continued)

Pin #	Signal Name
17A	A8
17B	A7
18A	A10
18B	A9
19A	A12
19B	A11
20A	A14
20B	A13
21A	A16
21B	A15
22A	A18
22B	A17
23A	A20
23B	A19
24A	A22
24B	A21
25A	RDOPL
25B	A23
26A	ST0
26B	- - -
27A	ST2
27B	ST1
28A	AS
28B	- - -
29A	LDS
29B	R/W
30A	- - -
30B	HDS
31A	DRCS
31B	- - -
32A	- - -
32B	- - -
33A	- - -
33B	- - -
34A	- - -
34B	- - -

P250 (continued)

Pin #	Signal Name
35A	- - -
35B	- - -
36A	- - -
36B	- - -
37A	- - -
37B	- - -
38A	ODRHWR
38B	ODRLWR
39A	- - -
39B	- - -
40A	- - -
40B	- - -
41A	- - -
41B	- - -
42A	- - -
42B	- - -
43A	- - -
43B	- - -
44A	- - -
44B	- - -
45A	- - -
45B	- - -
46A	- - -
46B	- - -
47A	- - -
47B	- - -
48A	- - -
48B	- --
49A	- - -
49B	- - -
50A	5 VDC GND
50B	5 VDC GND

P260
From: RS-232 PWB
To: Option mother PWB

Pin #	Signal Name
1A	5 VDC GND
1B	5 VDC GND
2A	5 VDC GND
2B	5 VDC GND
3A	5 VDC
3B	5 VDC
4A	5 VDC
4B	5 VDC
5A	D1
5B	D0
6A	D3
6B	D2
7A	D5
7B	D4
8A	D7
8B	D6
9A	D9
9B	D8
10A	D11
10B	D10
11A	D13
11B	D12
12A	D15
12B	D14
13A	- - -
13B	- - -
14A	A2
14B	A1
15A	A4
15B	A3
16A	A6
16B	A5

P260 (continued)

Pin #	Signal Name
17A	A8
17B	A7
18A	A10
18B	A9
19A	A12
19B	A11
20A	A14
20B	A13
21A	A16
21B	A15
22A	A18
22B	A17
23A	A20
23B	A19
24A	A22
24B	A21
25A	RDOPL
25B	A23
26A	- - -
26B	- - -
27A	- - -
27B	- - -
28A	AS
28B	- - -
29A	LDS
29B	R/W
30A	OPCS
30B	HDS
31A	- - -
31B	- - -
32A	- - -
32B	- - -
33A	- - -
33B	- - -
34A	- - -
34B	- - -

P260 (continued)

Pin #	Signal Name
35A	- - -
35B	- - -
36A	OPINT3
36B	- - -
37A	WAIT
37B	- - -
38A	- - -
38B	- - -
39A	- - -
39B	- - -
40A	- - -
40B	- - -
41A	- - -
41B	- - -
42A	±12 VDC GND
42B	±12 VDC GND
43A	- - -
43B	- - -
44A	- - -
44B	- - -
45A	−12 VDC
45B	−12 VDC
46A	±12 VDC GND
46B	±12 VDC GND
47A	12 VDC
47B	12 VDC
48A	- - -
48B	- - -
49A	- - -
49B	- - -
50A	5 VDC GND
50B	5 VDC GND

J262

From: RS-232 PWB
To: Host

Pin #	Signal Name
1	AA (GND)
2	BA (TD)
3	BB (RD)
4	CA (RTS)
5	CB (CTS)
6	CC (DSR)
7	AB (SG)
8	CF (RLSD)
9	- - -
10	- - -
11	- - -
12	- - -
13	- - -
14	- - -
15	- - -
16	- - -
17	- - -
18	- - -
19	- - -
20	CD (DTR)
21	- - -
22	CE (RI)
23	- - -
24	- - -
25	- - -

P270

From: Hard disk interface PWB
To: Option mother PWB

Pin #	Signal Name
1A	5 VDC GND
1B	5 VDC GND
2A	5 VDC GND
2B	5 VDC GND
3A	5 VDC
3B	5 VDC
4A	5 VDC
4B	5 VDC
5A	D1
5B	D0
6A	D3
6B	D2
7A	D5
7B	D4
8A	D7
8B	D6
9A	D9
9B	D8
10A	D11
10B	D10
11A	D13
11B	D12
12A	D15
12B	D14
13A	- - -
13B	- - -
14A	A2
14B	A1
15A	A4
15B	A3
16A	A6
16B	A5

P270 (continued)

Pin #	Signal Name
17A	A8
17B	A7
18A	A10
18B	A9
19A	A12
19B	A11
20A	A14
20B	A13
21A	A16
21B	A15
22A	A18
22B	A17
23A	A20
23B	A19
24A	- - -
24B	A21
25A	RDOPL
25B	- - -
26A	- - -
26B	- - -
27A	- - -
27B	- - -
28A	AS
28B	- - -
29A	LDS
29B	R/W
30A	OPCS
30B	HDS
31A	- - -
31B	- - -
32A	- - -
32B	- - -
33A	- - -
33B	- - -
34A	OPRST4
34B	- - -

P270 (continued)

Pin #	Signal Name
35A	- - -
35B	- - -
36A	- - -
36B	- - -
37A	- - -
37B	OPINT4
38A	- - -
38B	- - -
39A	SSACK
39B	SSREQ
40A	- - -
40B	- - -
41A	- - -
41B	- - -
42A	±12 VDC GND
42B	±12 VDC GND
43A	- - -
43B	- - -
44A	- - -
44B	- - -
45A	- - -
45B	- - -
46A	- - -
46B	- - -
47A	- - -
47B	- - -
48A	- - -
48B	- --
49A	- - -
49B	- - -
50A	5 VDC GND
50B	5 VDC GND

P/J271
From: Hard disk interface PWB
To: Hard disk drive

Pin #	Signal Name
1	GND
2	SDI0
3	GND
4	SD11
5	GND
6	SDI2
7	GND
8	SDI3
9	GND
10	SDI4
11	GND
12	SDI5
13	GND
14	SDI6
15	GND
16	SDI7
17	GND
18	SDIP
19	GND
20	GND
21	GND
22	GND
23	GND
24	GND
25	- - -
26	- - -
27	GND
28	GND
29	GND
30	GND
31	GND
32	ATN10

P271 (continued)

Pin #	Signal Name
33	GND
34	GND
35	GND
36	BSY0
37	GND
38	ACK0
39	GND
40	RST0
41	GND
42	MSGI0
43	GND
44	SEL0
45	GND
46	CDI0
47	GND
48	REQ0
49	GND
50	IO

P/J272

   From: Hard disk interface PWB
   To: Hard disk power supply

Pin #	Signal Name
1	5 VDC
2	5 VDC GND
3	- - -

P/J273

   From: Hard disk drive
   To: Hard disk power supply

Pin #	Signal Name
1	12 VDC
2	±12 VDC GND
3	5 VDC GND
4	5 VDC

P/J274

   From: Hard disk power supply
   To: Hard disk drive, hard disk interface PWB

Pin #	Signal Name
1	FRAME GND
2	5 VDC GND
3	5 VDC
4	- - -
5	±12 VDC GND
6	12 VDC

P/J275

   From: Hard disk power supply
   To: Power supply

Pin #	Signal Name
1	FRAME GND
2	- - -
3	ACH
4	- - -
5	AC(N)

P/J276

   From: Power supply
   To: Hard disk power supply

Pin #	Signal Name
1	FRAME GND
2	- - -
3	ACH
4	- - -
5	AC(N)
6	- - -
7	- - -

P280

   From: Encryption I/F PWB
   To: Option mother PWB

Pin #	Signal Name
1A	5 VDC GND
1B	5 VDC GND
2A	5 VDC GND
2B	5 VDC GND
3A	5 VDC
3B	5 VDC
4A	5 VDC
4B	5 VDC
5A	D1
5B	- - -
6A	- - -
6B	- - -
7A	- - -
7B	- - -
8A	- - -
8B	- - -
9A	- - -
9B	- - -
10A	- - -
10B	- - -
11A	- - -
11B	- - -
12A	- - -
12B	- - -
13A	- - -
13B	- - -
14A	- - -
14B	- - -
15A	- - -
15B	- - -
16A	- - -
16B	- - -

P280 (continued)

Pin #	Signal Name
17A	- - -
17B	- - -
18A	- - -
18B	- - -
19A	- - -
19B	- - -
20A	- - -
20B	- - -
21A	- - -
21B	- - -
22A	- - -
22B	- - -
23A	- - -
23B	- - -
24A	- - -
24B	- - -
25A	RDOPL
25B	- - -
26A	- - -
26B	ENCL
27A	- - -
27B	- - -
28A	- - -
28B	- - -
29A	- - -
29B	- - -
30A	- - -
30B	- - -
31A	- - -
31B	- - -
32A	- - -
32B	- - -
33A	- - -
33B	- - -
34A	- - -
34B	- - -

P280 (continued)

Pin #	Signal Name
35A	- - -
35B	- - -
36A	- - -
36B	- - -
37A	- - -
37B	- - -
38A	- - -
38B	- - -
39A	- - -
39B	- - -
40A	- - -
40B	- - -
41A	- - -
41B	- - -
42A	- - -
42B	- - -
43A	- - -
43B	- - -
44A	- - -
44B	- - -
45A	–12 VDC
45B	–12 VDC
46A	±12 VDC GND
46B	±12 VDC GND
47A	12 VDC
47B	12 VDC
48A	- - -
48B	- - -
49A	- - -
49B	- - -
50A	- - -
50B	- - -

P/J281 - Refer to P/J32
  From: Encryption I/F PWB
  To: G3 PWB

J282
  From: Encryption I/F PWB
  To: Encryptor

Pin #	Signal Name
1	- - -
2	TXD
3	CTS
4	TXC
5	DCD
6	RXD
7	GND
8	RXC
9	- - -
10	- - -
11	- - -
12	RTS
13	- - -
14	- - -
15	TXD
16	CTS
17	TXC
18	DCD
19	RXD
20	- - -
21	RXC
22	DTR
23	- - -
24	- - -
25	RTS

P/J300
 From: Main PWB
 To: Power supply

Pin #	Signal Name
1	24 VDC
2	24 VDC GND
3	5 VDC GND
4	5 VDC
5	12 VDC
6	−12 VDC
7	24 VDC
8	24 VDC GND
9	±12 VDC GND
10	5 VDC
11	5 VDC
12	LEDGND

P/J400
 From: Main PWB
 To: Thermal head

Pin #	Signal Name
1	TD
2	5 VDC GND
3	BEO
4	5 VDC GND
5	TLAL
6	5 VDC GND
7	TCK
8	5 VDC GND
9	TG0L
10	5 VDC GND
11	TG1L
12	TG3L
13	TG2L
14	TG4L
15	TST0L
16	5 VDC GND
17	TST1L
18	TSZ0
19	TSZ1
20	TSZ2
21	TM1
22	TM2
23	TR1
24	TR2
25	5 VDC
26	5 VDC

P/J401 - Refer to P/J400
 From: Thermal head
 To: Main PWB

P/J600
 From: Main PWB
 To: Video assembly

Pin #	Signal Name
1	PIX7
2	OF
3	PIX5
4	PIX6
5	PIX3
6	PIX4
7	PIX1
8	PIX2
9	12 VDC
10	PIX0
11	±12 VDC GND
12	5 VDC
13	±12 VDC GND
14	SI
15	−12 VDC
16	ISCK
17	LED 5 VDC
18	LEDGND
19	LED 5 VDC
20	LEDGND

Notes:

8. Accessories / Options

Section Contents

Introduction

This section of the service manual provides the necessary repair and general procedures for the options that are available for the 7033 terminal. All procedures required to install, troubleshoot, repair and adjust are contained with each option.

Each Option in this section contains the following:

1.1 An Introduction that provides general information associated with the option.

1.2 Repair/Analysis procedures which provide for analyzing faults within an option.

1.3 Repair/Adjustment procedures for the removal and replacement of most components and assemblies. Illustrations are provided to assist you during the procedures.

1.4 A Spare Parts Listing that consists of a series of disassembled subsystems and associated parts.

1.5 Install procedures for the option.

Specifications/General Procedures

8.1 Product Codes

6D0   1MB Memory Expansion

6D1   3MB Memory Expansion

5D8   RS-232 Interface (USO)

5D8-B RS-232 Interface (RX)

6D3   Encryption Interface

5D9   30MB Hard Disk Drive

6D2   Auxiliary Paper Tray (USO)

6D4   Auxiliary Paper Tray (RX)

7D5   Telephone (RX)

2H9   14.4 BPS Modem for 7032

0V6   LAN Fax Server (Ethernet, North American/English)

0V7   LAN Fax Server (Ethernet, RX)

0V8   LAN Fax Server (Token Ring, North American/English)

0V9   LAN Fax Server (Token Ring, RX)

8.2   Option Specifications

The following items relate to the installation requirements for the terminal options.

• All options must be installed by a service representative.

• Only two option PWBs can be installed in the option mother PWB at one time. When only one option PWB is installed, it should be positioned in J2 (closest slot to the main PWB).

• In order to install a 30MB hard disk assembly, the auxiliary paper tray option must already be installed.

CAUTION
To prevent damage to the hard disk drive, disconnect the power cord and wait ten to fifteen seconds before moving the terminal.

• The encryption interface PWB must always be installed in J2 (closest slot to the main PWB).

1.2 Repair Analysis Procedures

RAP 1.2.1 Auxiliary Tray Malfunction

1. Remove the paper tray and open the right side cover. Check the paper path for obstructions.

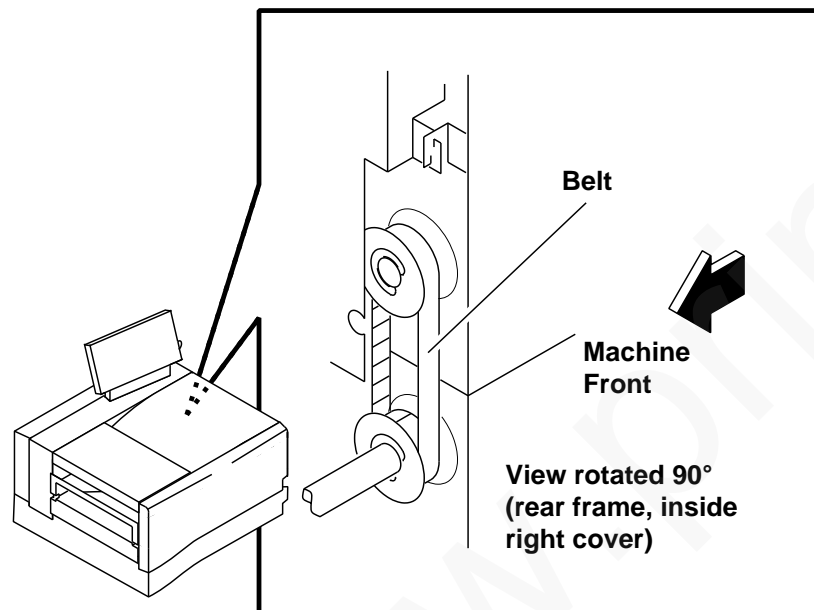   The paper path is clear.
   Y   N
   | Remove obstruction.

2. Verify that the drive belt is properly attached to the paper input roller gear and the auxiliary tray drive assembly (Figure 1).

   The belt is properly attached.
   Y   N
   | Attach/replace belt.

Belt

Machine Front

View rotated 90° (rear frame, inside right cover)

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Figure 1. Drive belt position

3. Perform the following:

   a. remove the rear cover from the auxiliary tray assembly.

   b. Verify that P/J194 in-line connector is properly connected.

   The connection is good.
   Y   N
   | Repair connection.

4. Inspect the feed shaft rollers, paper input roller, and idler rollers.

   Rollers are clean, properly mounted, and are not worn.
   Y   N
   | Clean/replace rollers.

5. Perform the following:

   a. Disconnect the power cord.

   b. Disconnect P/J194 in-line connector.

   c. On the auxiliary tray side of the connector, measure the resistance between pin 4 and pin 5 (Figure 2).

   Resistance is approximately 0 ohms.
   Y   N
   | Replace the paper size sensor.

6. Replace the paper feed solenoid. If problem still exists, replace clutch/spring assembly.
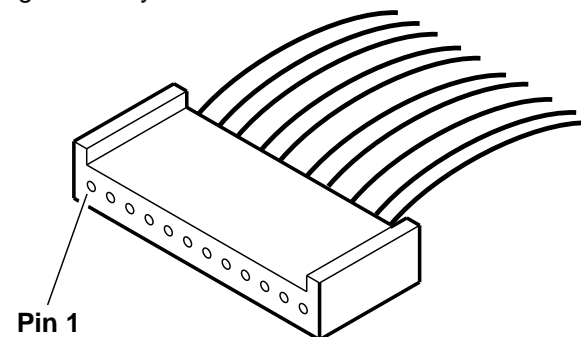

Pin 1

Figure 2. P/J194 Pin locations

1.3 Repair / Adjustment

REP 1.3.1 Auxiliary Tray Assembly Separation

Removal

1. Remove both output trays, the handset (if installed), and both paper trays.

2. Remove two screws from auxiliary tray rear cover, and remove cover.

3. Remove right side cover (REP 4.1.2) and rear cover (REP 4.1.7).

4. Remove screws from lower paper guide, and remove guide.

5. If installed, remove screws securing ground wires to electrical box.

6. If installed, remove the hard disk drive assembly.

   a. Remove the rear access cover an disconnect P/J271 and P/J272 from the hard disk interface PWB.

   b. Remove two mounting screws and slide hard disk assembly partially out of auxiliary tray assembly.

   c. Disconnect P/J275 from the hard disk power supply.

7. Carefully place terminal on its left side.

8. Separate the auxiliary tray assembly from the terminal.

   a. Slide paper input roller drive belt off of pulley.

   b. Disconnect P/J194 from bottom of electrical box.

   c. Remove 3 front securing screws, and loosen 3 rear securing screws, then carefully slide the auxiliary tray assembly away from terminal.

Replacement

1. Perform removal procedure in reverse order.

1.4 Spare Parts List

1.4.1 Covers and Electrical

Item	Part Number	Description
1	-----	Rear Cover
2	-----	Paper Guide
3	110K96560	Paper Size Sensor
4	48K96803	Right Side Cover
5	-----	Sensor Holder
6	110E96590	Low Paper Sensor
7	130K98010	Paper Out Sensor
8	48E95721	Front Cover
9	50K97756	Paper Tray (USO)
	50K97766	Paper Tray (RX)
10	48E95692	Left Side Cover
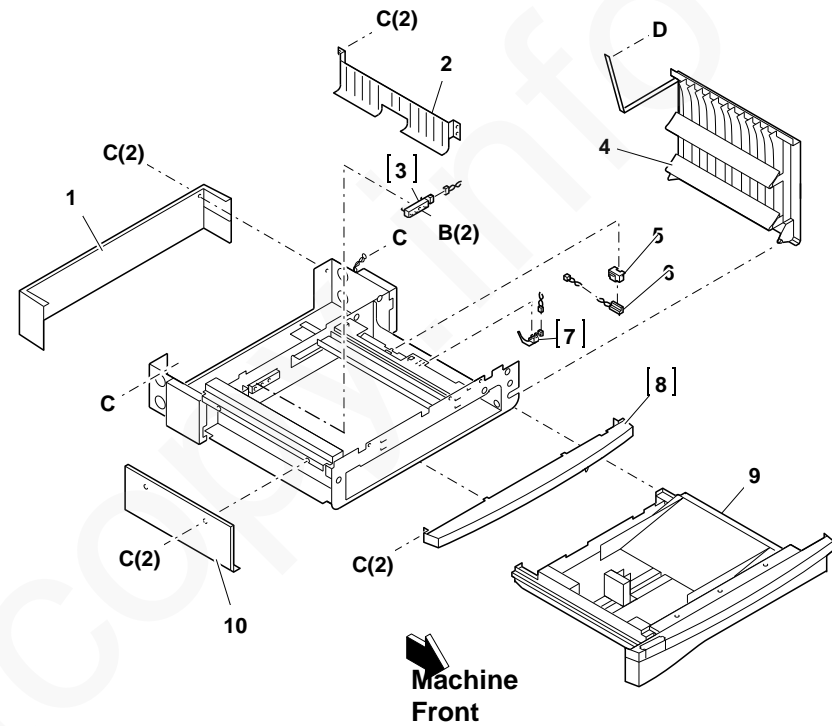
1.4.2 Mechanical

Item	Part Number	Description
1	413W77559	Bearing
2	59K99540	Paper Input Roller
3	6K80380	Feed Shaft Roller
4	6K96200	Feed Shaft Assembly
5	5K95660	Clutch/Spring Assembly
6	23E96980	Belt (112MXL)
7	121K97930	Paper Feed Solenoid
8	28E95810	Spacer
9	20E97030	Pulley (14/36T)
10	13E98010	Bearing
11	20E97040	Pulley (14T)
12	23E97000	Belt (60XL)
13	413W75959	Bearing

Machine Front
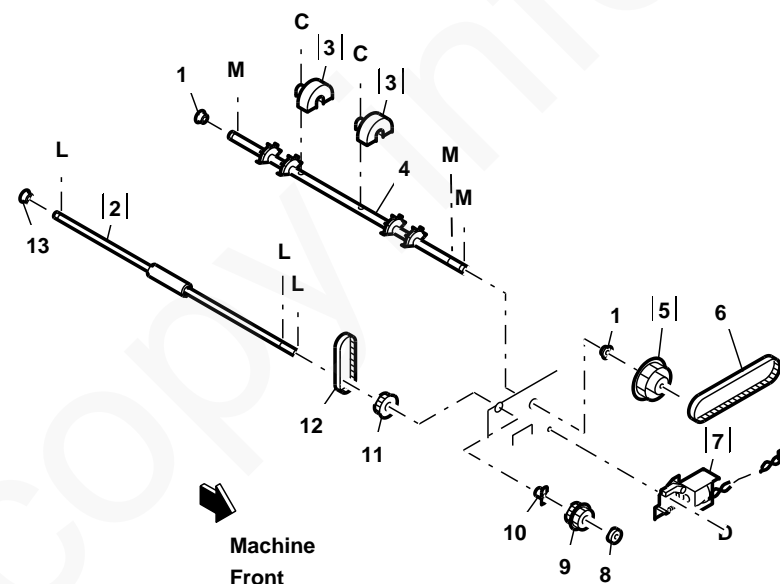
1.5 Installation

1.5.1 Auxiliary Tray Assembly

1. Remove auxiliary tray assembly from carton and verify contents.
   - auxiliary tray assembly
   - paper guide
   - right side cover
   - hardware (in bag)

2. On the terminal, remove the following:

   a. both output trays and the paper tray

   b. right side cover (REP 4.1.2)

   c. metal end plate located under the right side cover

   d. rear cover (REP 4.1.7)

3. Set the terminal on its left side and remove both operator guide holders.

4. On the auxiliary tray assembly, remove the paper tray and the rear cover.

5. Insert (do not tighten) the three rear mounting screws on the auxiliary tray assembly (Figure 1). Leave the screws loose enough for the brackets on the terminal to slide through.
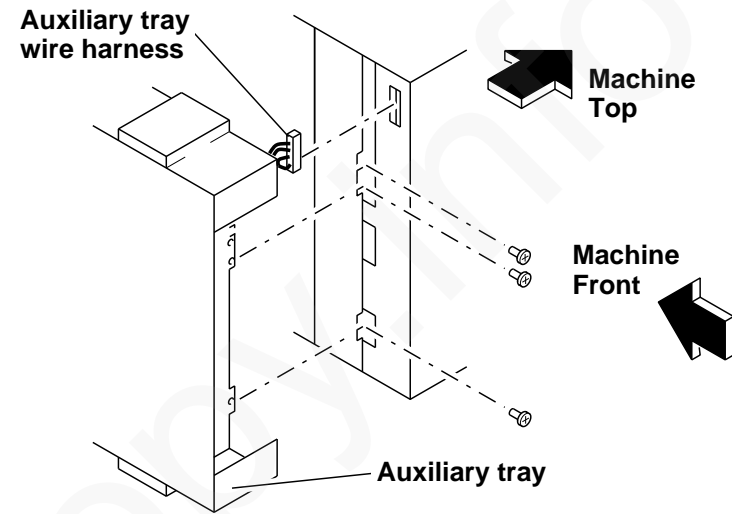

Figure 1. Auxiliary tray installation, rear screws

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6. Join the auxiliary tray assembly to the terminal. Secure the front with three screws, and tighten the three rear screws (Figure 2).

7. Perform the following:

   a. Install the operator guide holders on the bottom of the auxiliary tray assembly.

   b. Connect P/J194 at the bottom of the electrical box.

   c. Install the drive belt on the paper input roller gear (Figure 3).

   NOTE: If there is excessive slack in the drive belt after installing the belt on the gear, loosen the auxiliary tray mounting screws and bias the tray unit away from the terminal to remove the slack. Do not over tighten belt. 1/8 inch travel is normal. Retighten the screws.
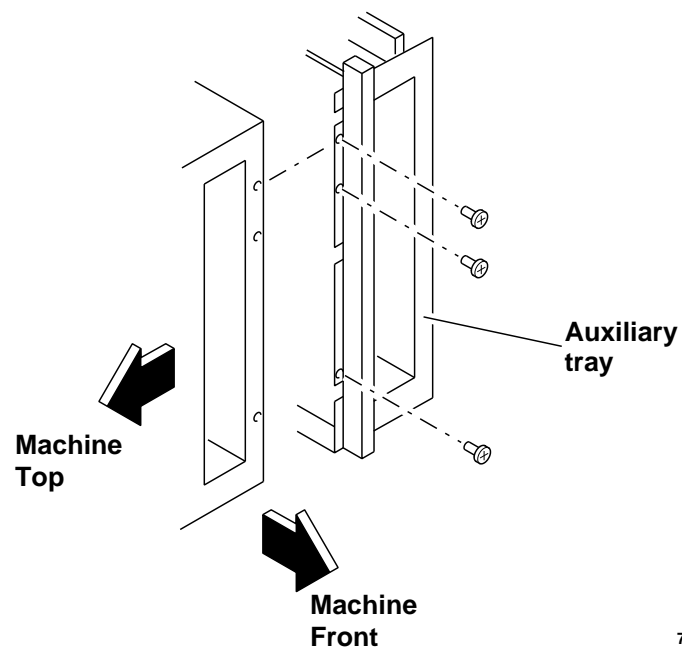
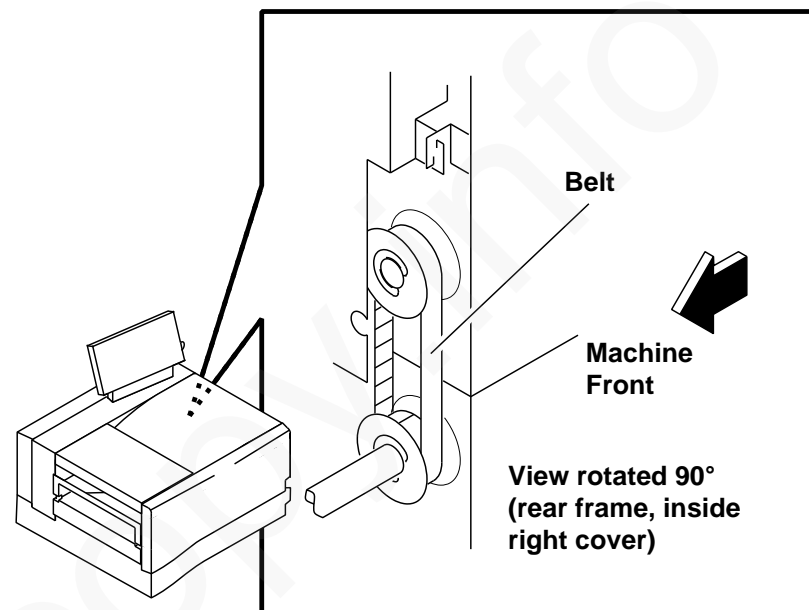**Figure 2. Auxiliary tray installation, front screws**

7033-279

Figure 3. Drive belt installation

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8. Set the terminal in its normal operating position and perform the following:

    a. If installed, secure the auxiliary tray grounding strap on both sides of the electrical box.

    b. Install the paper guide and new right side cover.

    c. Install all covers removed during the installation.

    d. Install the output trays, handset, and both paper trays.

9. Connect the power cord to the terminal and verify proper operation by running copies from both paper trays.

10. Mark the installation date on the product feature index label located under the donor film housing.

Notes

Hard Disk Option

Section Contents

1.1 Introduction

The Hard Disk Option, located in the rear of the Auxiliary Tray Option provides 30 megabyte of additional terminal memory.

CAUTION
To prevent damage to the hard disk drive, disconnect the power cord and wait ten to fifteen seconds before moving the terminal.

1.2 Repair Analysis Procedures

RAP 1.2.1   Hard Disk Drive Malfunction

When the control panel display and reports indicate "Hard Disk Failure", try the following recovery procedure before performing a reformat procedure. The reformat procedure will delete all files.

1. Disconnect the power cord. Wait 10 seconds.

2. Disconnect the hard disk interface PWB from the mother PWB. Do not remove any cables.

3. Connect the power cord.

4. Wait for the normal idle control panel display to appear (to initialize the terminal without the hard disk).

5. Disconnect the power cord. Wait 10 seconds.

6. Connect the hard disk interface PWB tothe mother PWB.

7. Connect the power cord.

8. Wait for the normal idle control panel display to appear (to initialize the terminal with the hard disk).

9. Enter the service mode.

10. Enter the soft switch mode (1+0+[Enter]).

   a. Select soft switch 029 and set to 01100011

   b. Select soft switch 055 and set to 00011110

   c. Select soft switch 056 and set to 10111010

   d. Exit soft switch mode

11. Exit the service mode.

12. Disconnect the power cord. Wait 10 seconds.

13. Connect the power cord.

14. If the "Hard Disk Failure" was caused by a programing bug rather than a valid disk failure, the queued transmit jobs should continue normally. The documents stored to the disk may be printed using the "pending jobs, view/delete" function. Print out a Pending Jobs Report to obtain the numbers assigned to the stored documents. The file numbers may be used to view (print) the stored documents or delete them.

NOTE: If you try to print documents stored to the disk using the "print from memory" function, the terminal will report that there are no documents stored to the disk.

15. If the preceding procedure resolved the failure indication, return the terminal to normal operation. If the failure indication remains, go to step 16.

16. Perform the following:

   a. Disconnect the power cord.

   b. Remove the auxiliary tray rear cover.

   c. Remove the rear access cover.

   d. Disconnect P/J271 and P/J272 from the hard disk interface PWB.

   e. Remove the two screws securing the hard disk assembly, then slide the assembly partially out of the auxiliary tray unit.

   f. Connect the power cord.

   g. Measure the voltage to the hard disk power supply at P/J275 (Figure 1).

The voltage is 104 to 127 VAC.
Y   N
 | Replace power supply (main).
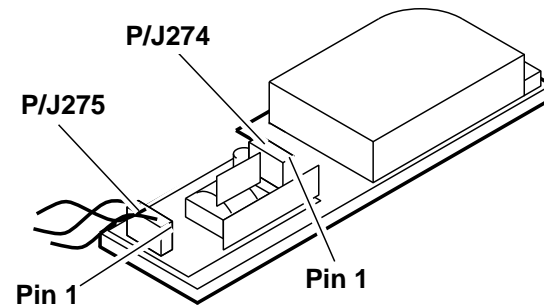
Figure 1. Hard disk assembly plug/pin locations

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RAP 1.2.1   Hard Disk Drive Malfunction (continued)

17. Perform the following:

  a. Disconnect the power cord.

  b. Disconnect P/J275 from the hard disk assembly.

  c. Remove the cover from the hard disk assembly.

  d. Reconnect P/J275, then connect the power cord.

  e. Measure the following voltages at P/J274 on the hard disk
      power supply.
      Pin 3 to pin 2 = 5 VDC ± .5 VDC.
      Pin 6 to pin 5 = 12 VDC ± 1.2 VDC.

  Both voltages are good.
  Y   N
  | Replace hard disk power supply.

18. Replace the hard disk interface PWB.   If the problem still exists,
     replace the hard disk drive.

1.3 Repair / Adjustment

1.3.1 Hard Disk Drive

Removal

1. Disconnect the power cord.

2. Remove the rear access cover.

3. Remove the hard disk assembly.

   a. Remove the rear access cover an disconnect P/J271 and P/J272 from the hard disk interface PWB.

   b. Remove two mounting screws and slide hard disk assembly partially out of auxiliary tray assembly.

   c. Disconnect P/J275 from the hard disk power supply.

4. Loosen the screws securing the cover, and lift off the cover.

5. Disconnect the ribbon harness and P/J273 from the hard disk drive.

6. Turn the hard disk drive assembly over and set it on a flat surface.

CAUTION
Do not apply excessive pressure on the hard disk drive when removing the screws.

7. Remove the four screws securing the hard disk drive to the bottom plate.

Replacement

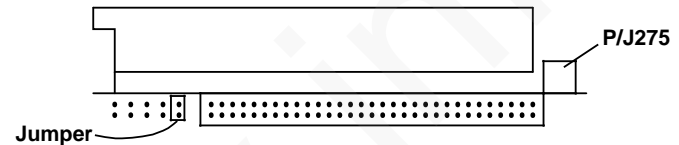1. Ensure the jumper on the disk drive is in the position shown in Figure 1.

Figure 1. Disk Drive Jumper Location (End View of Disk Drive)

2. Perform removal procedure in reverse order.

CAUTION
Do not perform the following step on a hard disk drive that contains customer data. All data will be destroyed.

3. If a new hard disk drive was installed, enter the service mode and perform the Hard Disk Reformat.

   a. Open the flip panel on the control panel.

   b. Press Terminal Options.

   c. Press Select until MORE is flashing, then press Enter. (Perform this step twice.)

   d. Press Select until HARD DISK REFORMAT is flashing, then press Enter.

4. Perform Service Test 20, Hard Disk Exerciser/Test to verify proper operation of the hard disk assembly.

1.3.2 Hard Disk Power Supply

Removal

1. Disconnect the power cord.

2. Remove the rear access cover.

3. Remove the hard disk assembly.

    a. Remove the rear access cover an disconnect P/J271 and P/J272 from the hard disk interface PWB.

    b. Remove two mounting screws and slide hard disk assembly partially out of auxiliary tray assembly.

    c. Disconnect P/J275 from the hard disk power supply.

4. Loosen the screws securing the cover, and lift off the cover.

5. Disconnect P/J274 from the hard disk power supply.

6. Turn the hard disk drive assembly over and set it on a flat surface.

7. Remove the two screws securing the power supply to the bottom plate.

Replacement

1. Perform removal procedure in reverse order.

1.3.3 Hard Disk Interface PWB

Removal

1. Remove the rear access cover.

    a. Disconnect telephone line and handset cords.

    b. If installed, disconnect the RS-232 or encryption interface cable.

    c. Remove screw securing access cover, then remove plastic and metal cover.
        NOTE: The metal cover may be secured by a screw on an existing option PWB. Remove the screw.

2. Disconnect P/J271 and P/J272 from the interface PWB.

3. Slide the hard disk interface PWB out of the option mother PWB.
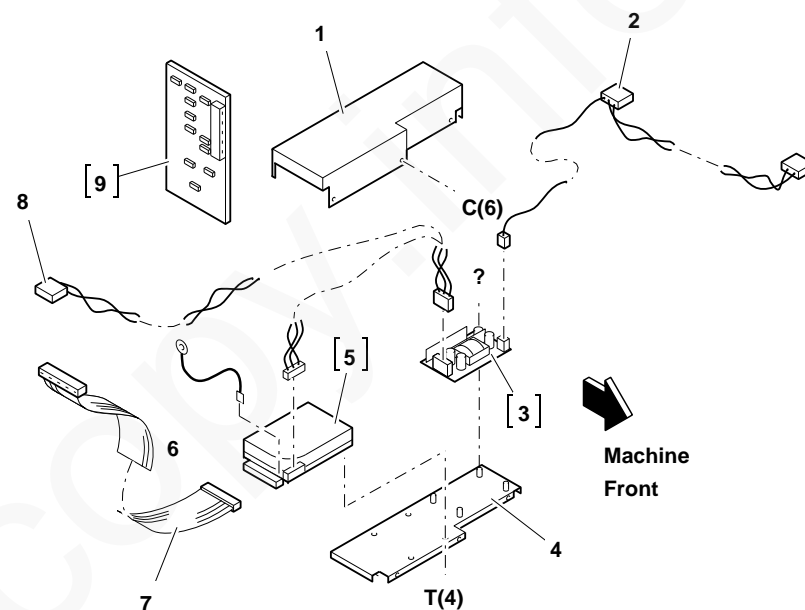
Replacement

1. Perform removal procedure in reverse order.

1.4 Spare Parts List

1.4.1 Hard Disk Option

Item	Part Number	Description
1	-----	Cover
2	-----	Harness, AC Power
3	105K97490	Hard Disk Power Supply
4	-----	Bottom Plate
5	121E97500	Hard Disk Drive, 30MB
6	-----	Ground Wire
7	152K75541	Harness, Disk Drive to Interface PWB
8	-----	Harness, DC Power
9	140K73605	Hard Disk Interface PWB

1.5 Installation

1.5.1 Hard Disk Assembly

NOTE:
- *The auxiliary tray assembly must be installed to accommodate the hard disk assembly. (standard for RX)*
- *A 1 Mb memory expansion PWB is required for the 7032.*
- *Early Option Kits contains firmware upgrade chips and a set of install instructions. Follow kit instructions before proceeding to step 1.*
- *Later production Hard Disk Option kits do not have firmware upgrade chips. Check the machine Options Report to ensure the machine has firmware level 4.84   (tag 9) or higher on the Ram/Rom PWB.*

1. Remove hard disk assembly from carton and verify contents.
    - hard disk assembly housing (includes power supply)
    - 30MB hard disk drive
    - hard disk interface PWB
    - option mother PWB
    - wiring harness
    - hardware (in bag)

2. Remove the following components.

    a. Remove the terminal rear cover (REP 4.1.7), and the auxiliary tray rear cover and the EMI shield (Rep 4.1.8).

    b. If installed, remove the memory expansion PWB (8.3.C.1).

3. Mount the hard disk drive in the assembly (Figure 1).

    a. Remove the housing cover.

    b. Mount the disk drive on the bottom plate.

    c. Connect P/J273 and the ground wire to the disk drive.

    d. Connect one end of the ribbon cable to the disk drive. To prevent the ribbon cable from rubbing against the bottom plate the harness should come out of the hard disk connector toward the disk drive, not the bottom plate.

    e. Install the housing cover. Secure the disk drive ground wire to the cover with one of the mounting screws.

4. Set the hard disk assembly close to the rear of the terminal and route the wiring harnesses through the bottom slot of the electrical box.
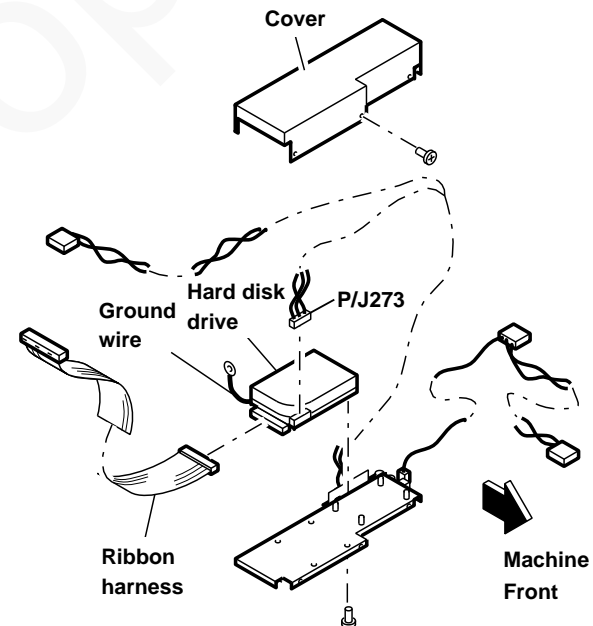

Figure 1. Mounting the hard disk

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5. Slide the hard disk assembly into the rear of the auxiliary tray unit and secure it with two screws.

6. Remove the small plate on top of the power supply, route the hard disk AC harness up through the electrical box, and connect P/J276.

CAUTION

Components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

7. If necessary, install the option mother PWB. Set the board on the guide and slide it to the left to connect P1 to J230 on the main PWB. Secure the upper right corner of the PWB to the electrical box using hardware provided in the kit.

8. Connect P/J271 (signal harness) and P/J272 (DC power) to the hard disk interface PWB, then connect the board to the option mother PWB.
NOTE: If this is the first option PWB installed, position the board in J2 (slot closest to main PWB).

9. Connect the power cord to the terminal, enter the service mode and perform the following to format the hard disk.

NOTE: If the hard disk assembly has been in an environment with a temperature that is more that 30° warmer or cooler than the install environment, allow a 45 minute power on time period before formatting the disk. This will allow the disk drive to stabilize.

   a. Open the flip panel on the control panel.

   b. Press Terminal Options.

   c. Press Select until MORE is flashing, then press Enter. (Perform this step twice.)

   d. Press Select until HARD DISK REFORMAT is flashing, then press Enter.

   e. Press enter in response to caution messages.

10. In service mode perform Service Test 20, Hard Disk Exerciser/Test (refer to page 6-11) to verify proper operation of the hard disk assembly.

11. Install all covers removed during installation.

12. Mark the installation date on the product feature index label located under the donor film housing.

Encryption Interface Option

Section Contents

1.1 Introduction

The Encryption Interface Option is installed between the G3 Modem and the G3 Coupler PWB. The encryptor (Not supplied by Xerox), provides protection against unauthorized access or alteration of data during a transmission. Depending on the type of encryptor being used determines the position of the jumpers located on the encryption Interface PWB.

1.2 Repair Analysis Procedures

RAP 1.2.1   Encryption Interface Malfunction

1. Perform the following:

   a. Disconnect the two Y-cable connectors from the encryption unit, then connect the cables together.

   b. Perform send or receive operation to a remote G3 terminal that is known to be operational.

   The operation completes successfully.
   Y   N
   | Go to step 3.

2. Notify customer of problem with encryption unit.

3. Perform the following:

   a. Disconnect the power cord.

   b. Remove the encryption interface PWB and the G3 PWB.

   c. Move the modem PWB to the G3 PWB.

   d. Install the G3 PWB in the terminal. (Do not install the encryption interface PWB.)

   e. Connect the power cord and perform a self test.

   The test completes successfully.
   Y   N
   | Replace in order:
            • Modem PWB
            • Main PWB

4. Replace in order:
   • Encryption interface PWB
   • Encryption interface to G3 harness
   • Encryption interface to encryptor harness

1.3 Repair / Adjustment

1.3.1 Encryption Interface PWB

Removal

1.   Remove the rear access cover.

    a.   Disconnect telephone line and handset cords.

    b.   Disconnect the encryption interface cable.   If installed, also disconnect the RS-232 cable.

    c.   Remove screw securing access cover, then remove plastic and metal cover.
       NOTE: The metal cover may be secured by a screw on an existing option PWB. Remove the screw.

2.   Slide encryption interface PWB out of the option mother PWB.

3.   Disconnect the ribbon connector.

Replacement

1.   If a new encryption interface PWB is being installed, perform the following:

    a.   Ensure JP1 and JP2 settings match the old PWB settings.

    b.   Move the modem PWB to the new encryption PWB.

2.   Perform removal procedure in reverse order.

1.4 Spare Parts List

1.4.1 Encryption Interface PWB

Item	Part Number	Description
1	140K23630	Encryption Interface PWB
2	152K34610	Harness, Encryption Interface PWB to Encryptor
3	152K34620	Harness, Encryption Interface PWB to G3 PWB

Machine Front
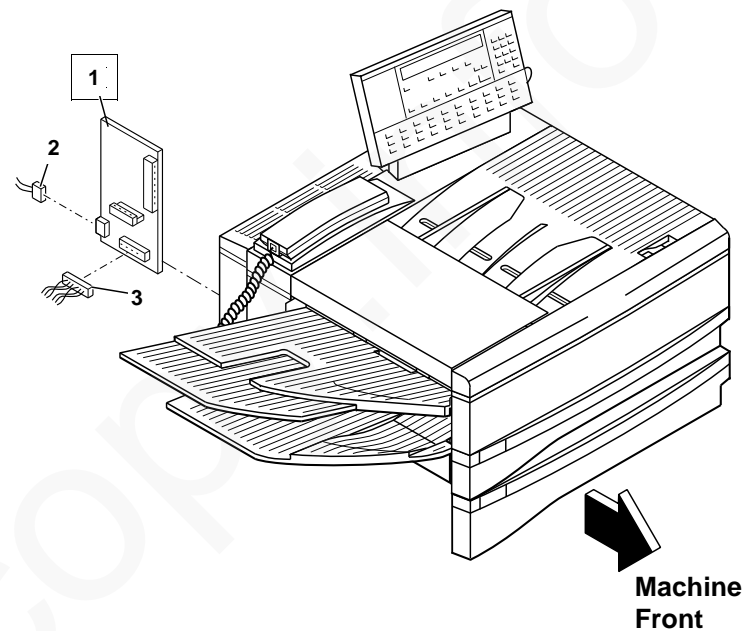
1.5 Installation

1.5.1 Encryption Interface PWB

1. Remove encryption interface PWB kit from carton and verify contents.
    - encryption interface PWB
    - option mother PWB
    - ribbon harness (G3 PWB to encryption interface PWB)
    - Y-cable
    - bag of hardware

2. Set the encryption interface PWB jumpers (Figure 1) to the required settings as shown in Table 1.

Table 1. Encryption Interface PWB Jumper Settings

Jumper	Settings	Encryptor	Description
JP1	OFF	GRETAG	All data (pix and protocol) is sent to the encryptor, but only pix data is encrypted. (ENCOL signal is disabled)
JP2	OFF		DTR signal is not provided to the encryptor.
JP1	ON	DATOTEK	Only pix data is sent to the encryptor to be incrypted. (ENCOL signal is enabled)
JP2	OFF		DTR signal is not provided to the encryptor.

Factory default setting; J1 = OFF, J2 = OFF

3. Remove and modify the rear access cover.

    a. Disconnect the telephone line and handset cords.

    b. If installed, disconnect the RS-232 cable.
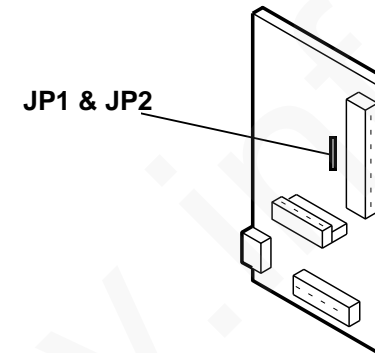

Figure 1. Encryption Interface PWB Jumpers

c. Remove screw securing the access cover, then remove the plastic and metal cover.

d. Remove the plastic knock-out on the access cover for the harness connection.

4. If necessary, install the option mother PWB. Set the board on the guide and slide it to the left to connect P1 to J230 on the main PWB. Secure the upper right corner of the PWB to the electrical box using the plated screws provided in the kit.

5. Move the modem PWB from the G3 PWB to the encryption interface PWB and connect the ribbon harness (Figure 2).

    a. Loosen the screw securing the G3 PWB, then slide the board out of the electrical box.

    b. **RX only:** Disconnect P/J3 on the coupler PWB, then compress the standoffs to separate the G3 and coupler PWBs.

    c. Remove the modem PWB from the G3 PWB and install it on the encryption interface PWB.

    d. Connect one end of the pre-formed ribbon harness to P/J32 on the G3 PWB, and the other end to P/J281 on the encryption interface PWB.

    e. **RX only:** Reseat the coupler PWB on the G3 PWB and connect P/J3.

    f. Connect the G3 PWB to the main PWB, and tighten the mounting screw.
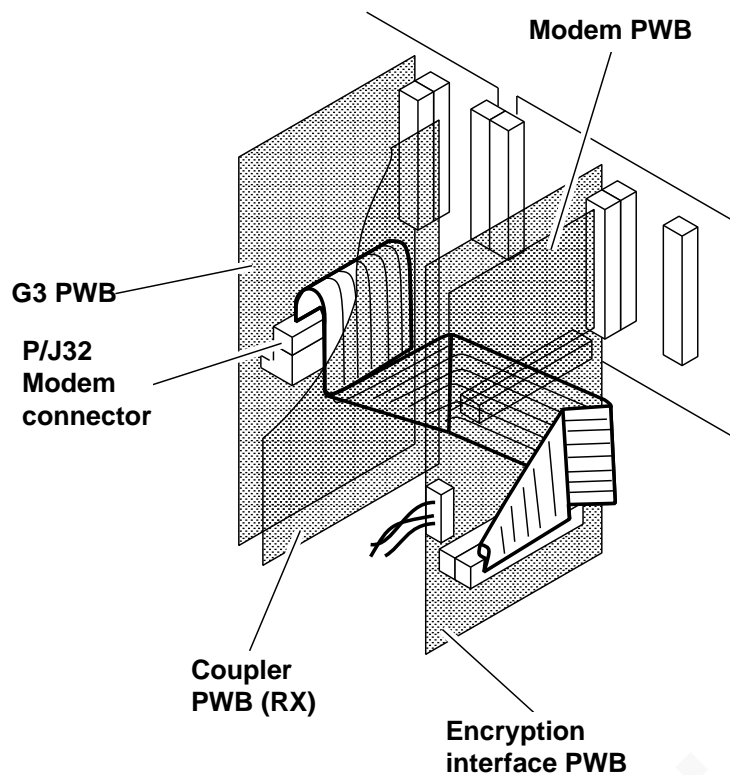
Modem PWB

G3 PWB

**P/J32
Modem
connector**

**Coupler
PWB (RX)**

**Encryption
interface PWB**

7033-284

Figure 2. Encryption interface cable routing

6.   Connect the encryption interface PWB to J2 on the option mother
      PWB.
      *NOTE: For proper operation, the encryption interface PWB must
      be located in slot J2.   If another option is already installed, move
      that board to J3.*

7.   Replace the rear access cover using two black screws and connect
      all cords/cables that were disconnected in step 3.

8.   Connect the Y-cable for the encryptor.

9.   Mark the installation date on the product feature index label
      located under the donor film housing.

10.   Connect power to the terminal and enter service mode.

11.   Enter soft switch mode.

      a.   Press 1then 0 then [Enter].

      b.   Press [Start] two times.

      c.   Select soft switch 013 and set bit 0 and bit 1 to"1".

            Example: SS 013 = 00010111

      *NOTE: This places the terminal in G3 mode only.   Encryption does
      not function in a G2 operation.*

12.   Exit service mode.

13.   If an encryption device has not been provided.   Connect the two
      ends of the Y cable together.   This will allow normal machine
      operation for G3 only.

RS 232 Interface Option

Section Contents

1.1 Introduction

The RS232 Interface Option provides an input/output between the terminal and PC for the purpose of printing or sending Fax data or character coded (ASCII) data. Jumpers JP1 and JP2 must be selected for the proper memory and Eprom size on the main PWB.

1.2 Repair Analysis Procedures

RAP 1.2.1   RS 232 Interface Malfunction

1. Perform the following:

    a. Disconnect the host interface cable from the RS-232 interface PWB.

    b. Connect a universal loopback tool (short between pin 2 and pin 3) to the RS-232 interface PWB.

    c. Perform Service Test 22, RS-232 Loopback Test.

    The test completes successfully.
    Y   N
    | Replace in order:
            • RS-232 interface PWB
            • Main PWB

2. Replace the host interface cable. If the problem still exists, contact the TSC.

1.3 Repair / Adjustment

1.3.1 RS 232 Interface Option

Removal

1.   Remove the rear access cover.

   a.   Disconnect telephone line and handset cords.

   b.   Disconnect the RS-232 cable.   If installed, also disconnect the
         encryption interface cable.

   c.   Remove screw securing access cover, then remove plastic and
         metal cover.
         *NOTE: The metal cover may be secured by a screw on an
         existing option PWB. Remove the screw.*

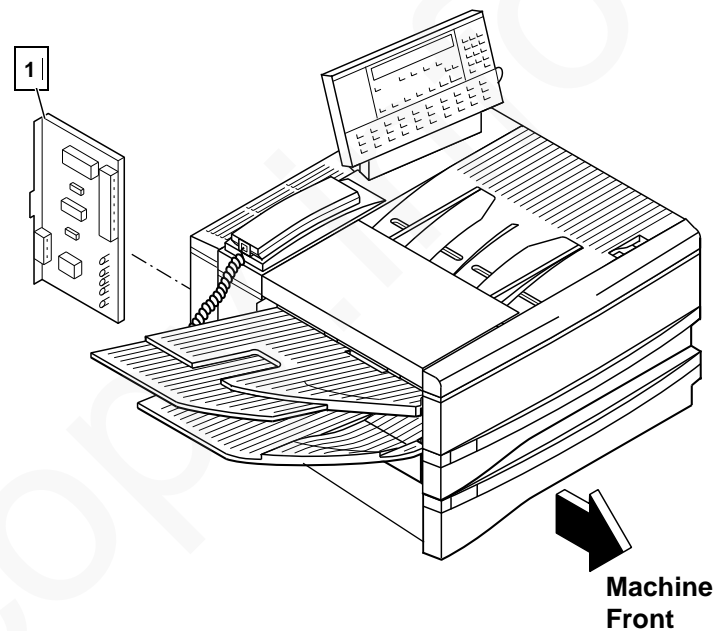2.   Slide RS-232 PWB out of the option mother PWB.

Replacement

1.   If a new RS-232 PWB is being installed, ensure JP1 and JP2 settings
      match the old PWB settings.

2.   Perform removal procedure in reverse order.

1.4 Spare Parts List

1.4.1 RS 232 Interface PWB

Item	Part Number	Description
1	140K40900	RS-232 PWB

Machine Front

1.5 Installation

1.5.1 RS 232 Interface Option

1. Remove RS-232 PWB kit from carton and verify contents.
   - RS-232 PWB
   - option mother PWB (Tag 7)
   - hardware in bag
   - Firmware Upgrade kit (optional)
   - User Handbook revision package

NOTE: *Before installing the RS232 Option determine the proper firmware level of the base terminal. Refer to the firmware level in the upgrade kit. If current level is higher than the base terminal, upgrade following the install procedures provided in the kit. If base terminal is equal to or higher than the kit firmware proceed to step 2.*

2. Set the RS-232 PWB jumpers (Figure 1) to the required settings as shown in Table 1.

Table 1. RS-232 PWB Jumper Settings

Jumper	Setting	Description
JP1	UP DOWN *	Z84 CPU memory: ROM 0000H - C000H Z84 CPU memory: ROM 0000H - 8000H
JP2	UP * DOWN	512K EPROM (Memory size of U14) 256K EPROM (Memory size of U14)

* Indicates factory setting (default).

3. Remove and modify the rear access cover.

   a. Disconnect the telephone line and handset cords.

   b. If installed, disconnect the encryption interface cable.

   c. Remove screw securing the access cover, then remove the plastic and metal cover.

   d. Remove the plastic knock-out on the access cover for the harness connection.

4. If necessary, install the option mother PWB (Tag 7). Set the board on the guide and slide it to the left to connect P1 to J230 on the main PWB. Secure the upper right corner of the PWB to the electrical box using the hardware provided in the kit.

5. Connect the RS-232 PWB to the option mother PWB.
   NOTE: If this is the first option PWB installed, position the board in J2 (slot closest to main PWB).

6. Replace the rear access cover and connect all cords/cables that were disconnected in step 3.

7. Connect the RS-232 interface cable (provided by customer).

8. Perform Service Test 22, RS-232 Loopback Test to verify proper operation of the RS-232 PWB.

9. Mark the installation date on the product feature index label located under the donor film housing.
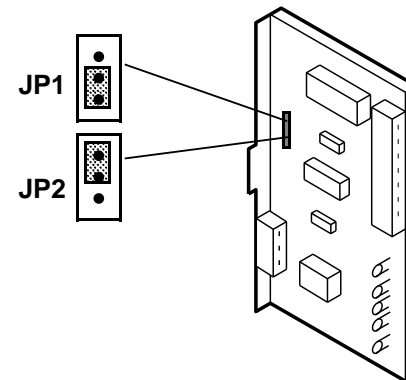
Figure 1. RS-232 PWB Jumpers

10. Give customer the User Handbook revision package and answer any questions the customer may have.

Notes

Memory Expansion PWB Option

Section Contents

1.1 Introduction

When additional document storage memory is required, a one megabyte and a three megabyte option is available.   When installing either the one or three megabyte PWB's switch SW1 must be set to match the size of memory on the main PWB (.5 Megabyte or 1 Megabyte).

A 1 megabyte option PWB is required for a 7032 with a hard disk drive option.

1.2 Repair / Adjustment

1.2.1 Memory Expansion PWB

Removal

1. Remove the rear access cover.

    a. Disconnect telephone line and handset cords.

    b. If installed, disconnect the RS-232 or encryption interface cable.

    c. Remove screw securing access cover, then remove plastic and metal cover.
        NOTE: The metal cover may be secured by a screw on an existing option PWB. Remove the screw.

2. Slide memory expansion PWB out of the option mother PWB.

Replacement
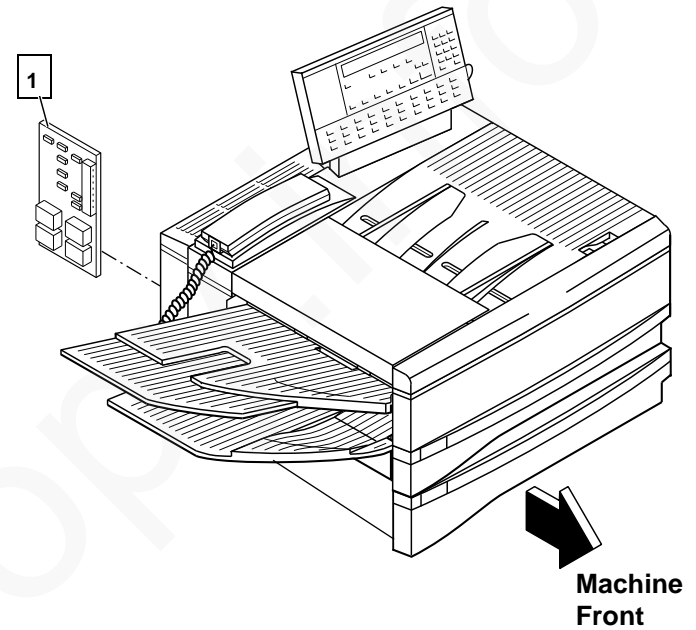
1. If a new memory expansion PWB is being installed, ensure SW1 settings match the old PWB settings.

2. Perform removal procedure in reverse order.

1.3 Spare Parts List

1.3.1 Memory Expansion PWB

Item	Part Number	Description
1	140K73591	Memory Expansion PWB, 1 MB
	140K73581	Memory Expansion PWB, 3 MB

Machine Front

1.4 Installation

1.4.1 Memory Expansion PWB

1. Remove memory expansion PWB kit from carton and verify contents.
   - memory expansion PWB
   - option mother PWB
   - hardware in bag

2. Ensure SW1 (Figure 1) on the memory expansion PWB is configured correctly. The setting of SW1 is determined by the the amount of base terminal memory as shown in Table 1.

Table 1. SW1 Settings

Switch	Memory Expansion PWB Switch Settings				Description
	1	**2**	**3**	**4**	
SW1					
	OFF	OFF	OFF	ON	7033 terminal with 1 Mb of memory on main PWB
	OFF	OFF	OFF	OFF	7032 terminal with .5 Mb of memory on main PWB

NOTE: An incorrect switch setting (SW1) can result in a FC37 error code.

3. Remove the rear access cover.

   a. Disconnect the telephone line and handset cords.

   b. If installed, disconnect the RS-232 or encryption interface cable.

   c. Remove screw securing the access cover, then remove the plastic and metal cover.

4. If necessary, install the option mother PWB. Set the board on the guide and slide it to the left to connect P1 to J230 on the main PWB. Secure the upper right corner of the PWB to the electrical box using hardware provided in the kit.

5. Connect the memory expansion PWB to the option mother PWB. *NOTE: If this is the first option PWB installed, position the board in J2 (slot closest to main PWB).*

6. Replace the rear access cover and connect all cords/cables that were disconnected in step 3.

7. Mark the installation date on the product feature index label located under the donor film housing.
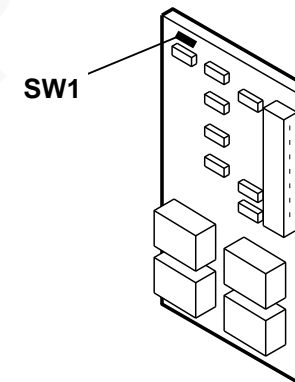
Figure 1. SW1 Location

NOTE: After the option has been installed and the 7032 has been powered up the memory option will work correctly if no additional action is taken and the 7032 will remain in the single access mode. However, at the customers option, the 7032 with additional memory can be set to the dual access mode by performing one of the following. Select Soft Switch 219 and set bit "0" to "1" of perform a RAM clear "Program". Setting the Soft Switch is the preferred procedure.

14.4 Kbps Trellis Modem Option

Section Contents

1.1 Introduction

The high speed 14.4 Kbps Trellis Modem Option comes standard on the 7033 and is an option on the 7032 terminal. With the higher resolutions of the 7032/7033 terminals, this high speed modem provides the optimum transmission speed.

The repair analysis procedures for the modem is included in the level 1 and 2 RAPS of the base terminal (Refer to section 2).

1.2 Installation

1.2.1 14.4K bps Modem

1. Remove PWB access cover.

2. Remove G3 PWB (REP 4.6.4).

3. **RX only:** Disconnect P/J3 on the coupler PWB. Compress the standoffs, and separate the G3 and coupler PWBs.

4. Compress the standoff to release Modem PWB.

5. Remove Modem PWB from connector J32.

6. Install 14.4K bps Modem on standoff, connecting J32.

7. Replace all parts by performing removal procedures in reverse order.

1.3 Spare Parts List

1.3.1

Item	Part Number	Description
1	110K96660	14.4 Kbps Modem PWB
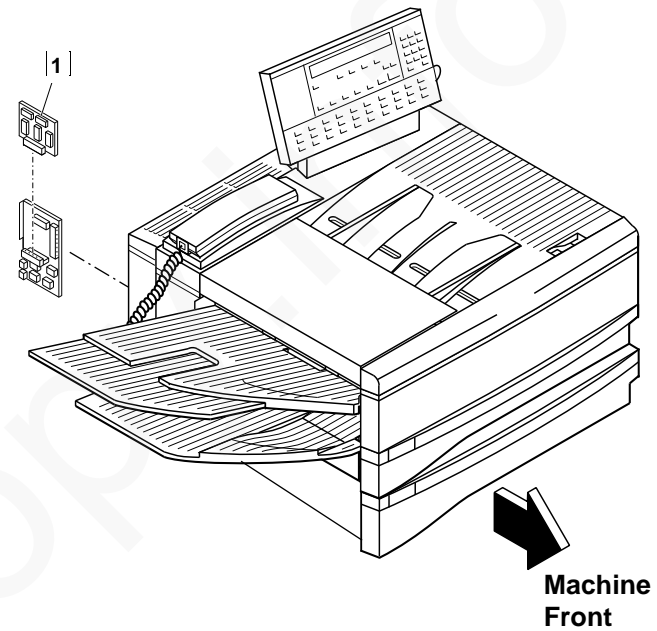
Machine Front

Notes

7032/7033 Security Lock Option

Section Contents

1.1 Introduction

The Security Lock Option secures the Imaging Cartridge from being removed from the 7032/7033 terminal by unauthorized personnel. The Security Lock and locking mechanism is installed on the Printer Cover Assembly and the customer is provided two keys.

1.2 Installation

1.2.1 7032/7033 Security Lock Kit

1. Remove Printer Cover assembly from carton and verify contents.

    *   Printer Cover Assembly with Lock
    *   Two keys
    *   Kit Installation Instructions

2. Remove the following components.

    a. Disconnect the power cord.

    b. Remove the Printer cover assembly (PL 5.1A).

    c. Lower the right side cover.

    d. Open the printer top cover.

    e. Loosen the four top cover screws.

    f. Partially close the upper printer, and remove the cover. The left end must be lifted up first, and then slide the cover away from upper printer hinge shaft.

3. Install the following components.

    a. Remove the two keys secured with tape from the underside of the cover.

    b. Install the cover with the security lock in reverse order making sure the security lock cam is parallel with the top cover as seen through the cut-out (Figure 1).

    c. Install the Imaging Cartridge into the terminal, close the cover and secure the security lock with key. Make sure the cover is secure and can not be opened.

    d. Perform a diagnostic self test and copy operation.

    e. Instruct the customer on the use of the Security Lock Option and give the customer the two keys.
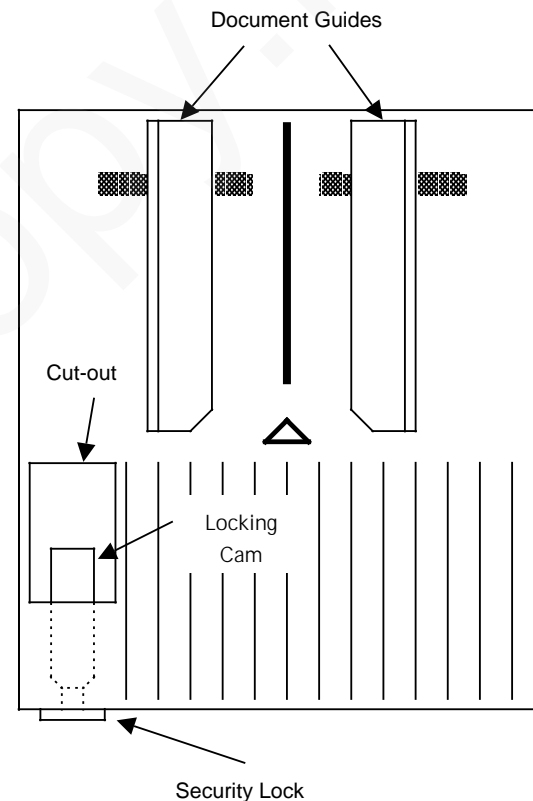
**Figure 1. Printer Cover Assembly
Top View**

1.3 Spare Parts List

1.3.1

Item	Part Number	Description
1	73K68510	Security Lock Cover Assembly with Keys
2	3E18080	Security Lock Keys (P/O Item 1)
		(Not Shown)
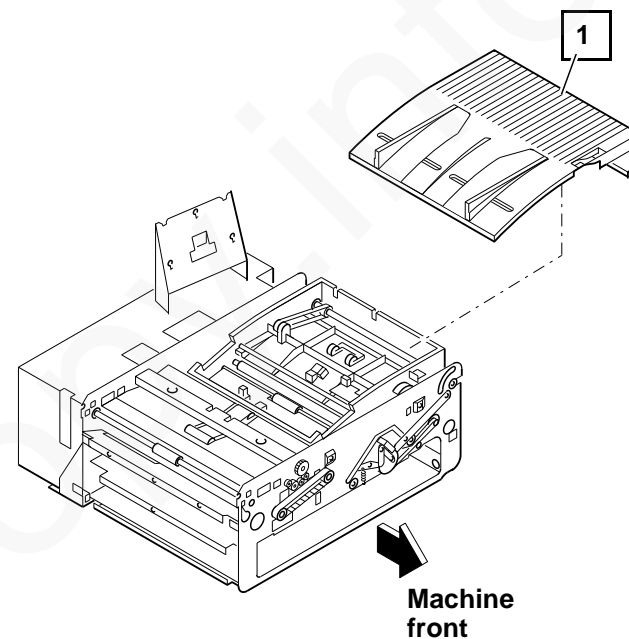
**Machine
front**

Notes

Section Contents

1.1 Introduction

The Xerox LAN Fax Server Option, connected to a Novell local area network improves user productivity in networked personal computer (PC) environments by making PC facsimile transmissions as easy as printing. The option is a hardware and software product that connects the terminal to the network. There are two versions of the LAN Fax Server, one for Ethernet and another for Token Ring cabling.

Product Codes:

0V6 (Ethernet Kit for North American English)
0V7 (Ethernet Kit for RX)
0V8 (Token Ring Kit for North American English)
0V9 (Token Ring Kit for RX)

1.2 Repair Analysis Procedures

Begin each procedure with step 1. It is important to follow the sequence outlined since each step assumes the previous steps to be correct. Each step is the normal operational event of the LAN Fax Server PWB and can be confirmed by answering **Y** (yes) to the statement. A **Y** response leads to the next step. An **N** (No) response will lead to a RAP in this section or to a component replacement. Replace the components listed after **N** in the order given.

When a problem has been isolated to a faulty component or subassembly, first check for loose, bent, or dirty connections as the cause of the problem. If one of these is the cause, always attempt to resolve the problem by tightening connections, straightening bent pins, or cleaning contacts prior to replacing components.

Perform RAP 1.2.1 to verify repair after completing each corrective action (replacing or adjusting a part, reseating a connector, etc.).

The Primary Error Code List in section 2 should be used whenever an error code occurs during an operation or a self test. The list identifies a replaceable component (or components) for a code, or directs you to perform a RAP to isolate the problem.

If Service Call Procedures do not isolate the problem, call for technical assistance.

1.2.1 LAN Fax Server PWB Indicator Light Boot Sequence

1. Remove AC power from the terminal and the optional LAN Fax Server PWB power supply.

NOTE: The external DC power supply is required when the LAN Fax Server PWB is configured for operation on a Ethernet Thick cable network.

2. Power ON the terminal and the optional DC power supply.

3. The LAN Fax Server PWB test the Red and Green LED's. Both the Red and Green LED's blink ON then OFF (Normal time is about 1 sec., Maximum 3 sec.).
   Y   N
   | Replace the LAN Fax Server PWB

4. The LAN Fax Server PWB runs power on diagnostics. The Green LED is blinking ON and OFF while the Red LED remains OFF (Normal time is about 5 sec., Maximum 10 sec.).
   Y   N
   | Go to RAP 1.2.3

5. The LAN Fax Server PWB is connected to the network.
   Y   N
   | Go to RAP 1.2.15

6. The LAN Fax Server PWB initializes and searches the file server for the EXPRESS.SYS file. The indication is Green LED OFF and Red LED ON which may flicker (Normal time is about 30 sec., Maximum 35 sec.).
   Y   N
   | Go to RAP 1.2.4

7. The LAN Fax Server locates the EXPRESS.SYS file and downloads the file. The indication is both Red and Green LED's are ON during downloading (Normal time is about 3-5 sec., Maximum 30 sec.).

    Y   N
    | Go to RAP 1.2.5

8. The LAN Fax Server PWB searches the file server for the EXPRESS.OUT file. The indication is the Green LED is OFF and the Red LED is ON (Normal time is about 9-11 sec., Maximum 30 sec.).
    Y   N
    | Go to RAP 1.2.6

9. The LAN Fax Server locates the EXPRESS.OUT file and downloads the file. The indication is both Red and Green LED's are ON during downloading (Normal time is about 27 sec., Maximum 35 sec.).
    Y   N
    | Go to RAP 1.2.7

10. The LAN Fax Server PWB boot sequence has completed. The Green LED is ON and Red LED is OFF.
    Y   N
    | Go to RAP 1.2.8

11. A printer configuration report is printed on the 7033 terminal.
    Y   N
    | Go to RAP 1.2.14

12. After the boot sequence completed correctly (Green LED ON, Red LED OFF). The indications changed to Green and Red LED's ON.
    Y   N
    | Go to Step 14.

13. Perform RAP 1.2.9
    Problem was corrected
    Y   N
    | Call for assistance.

14. After the boot sequence completed correctly (Green LED ON, Red LED OFF). The indications changed to Green LED OFF and Red LED blinking.
    Y   N
    | Go to Step 16

15. Perform RAP 1.2.10
    Problem corrected.
    Y   N
    | Call for assistance.

16. After the boot sequence completed correctly (Green LED ON, Red LED OFF). The indications changed to Green LED is OFF and the Red LED is ON
    Y   N
    | Go to Step 18

17. Perform RAP 1.2.11
    Problem corrected.
    Y   N
    | Call for assistance.

18. After the boot sequence completed correctly (Green LED ON, Red LED OFF). The indications changed to Green and Red LED's are OFF.
    Y   N
    | Go to Step 21

19. Perform RAP 1.2.12
    Problem corrected.
    Y   N
    | Call for assistance.

20. The LAN Fax Server PWB receives document(s) to a local mailbox from a remote terminal with DTMF input.
    Y   N
    | Perform RAP 1.2.13

21. The LAN Fax Server PWB is connected to the network and is operating correctly. Normal operator functions can be performed .

1.2.2 Power Supply Voltage Checks

NOTE: *The external DC power supply is only used when the LAN Fax Server PWB is configured for operation on a Ethernet Thick cable.*

1. Perform the following line voltage check.

    a. Disconnect the power cord from the AC outlet.

    b. Perform the following:
       (Refer to Figure 8h - 1)

       • Measure the AC voltage between AC Hot and Neutral. Meter = 104 to 127 VAC.

       • Measure the AC voltage between the AC Neutral and GROUND. Meter = less than 3 VAC.

    c. Perform the following:
       (refer to Figure 8h - 2)

       RX:
       Measure the AC voltage between Live and Neutral. Meter = 196 to 264 VAC.

2. The voltages are correct.
    Y   N
    | Inform the network supervisor of insufficient voltage (or improper wiring).
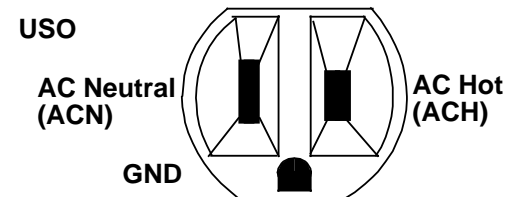
Figure 8h - 1 USO AC Outlet

Earth

Neutral

Live
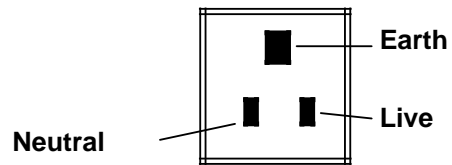
Figure 8h - 2 RX UK Wall Outlet

3. Disconnect the power supply cable from the LAN Fax Server PWB and then reconnect the power supply to the AC outlet.

    a. Perform the following:
        (Refer to Figure 8h - 3)

4. Place red meter lead on pin 1 and black meter lead on pin 2. The DC voltage reads +12 volts
    Y   N
    | Replace DC Power Supply.

5. Replace LAN Fax Server PWB.

6. Return to RAP 1.2.4 Step 8.

Common

2

1

+12VDC
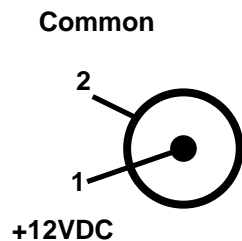
Figure 8h-3 Power Supply Connector Pins

1.2.3 Power on Diagnostics.

1. During power on diagnostics the Green LED is blinking ON and OFF while the Red LED remains OFF.
    Y   N
    | Replace LAN Fax Server PWB.

2. Return to RAP 1.2.1

1.2.4   Searching for the XPRESS.SYS file

1. The LAN Fax Server PWB is searching for the XPRESS.SYS file. The Green LED is OFF and the Red LED is ON.
    ```
    Y     N
    |     Go to Step 3.
    ```

2. Return to RAP 1.2.1

3. The terminal Printer Cover is closed.
    ```
    Y     N
    |     Close the Printer Cover.
    ```

4. The LAN Fax Server PWB has been configured for the correct cable type network.
    ```
    Y     N
    |     Refer to the Installation of hardware section of this manual
    |     or  Supervisors Handbook for setup procedures.
    ```

5. The cable is connected from the LAN Fax Server PWB to the network.
    ```
    Y     N
    |     Connect the cable.
    ```

6. Is the network Ethernet Thick.
    ```
    Y     N
    |     Go to step 8
    ```

7. Go to RAP 1.2.2

8. If possible disconnect the interface cable from The LAN Fax Server PWB and network. Perform a continuity check. The cable is wired pin to pin. Example pin 1 of one end of cable is connected to pin 1 of the other end of the cable. If this is not possible move the terminal to another known good cable drop. The continuity checks good or the terminal functions correctly on another drop.
   ```
    Y   N
    | Inform Network Supervisor to replace cable.
    ```

9.  Request the Network Supervisor to verify proper operation of the network file server and the network cable.  The server and network cable are working correctly.
    ```
    Y   N
    | Network Supervisor corrects problem.
    ```

10. Perform a LAN Fax Server PWB Boot sequence operation with all cables connected.  The Green LED is OFF and the Red LED is ON while Express is searching for the XPRESS.SYS file.
    ```
    Y   N
    | Replace the LAN Fax Server PWB.
    ```

11. Return to RAP 1.2.1

## 1.2.5  Downloading the XPRESS.SYS file

1.  The LAN Fax Server PWB downloads the XPRESS.SYS file from the network server.  The Green and Red  LED's are ON.
    ```
    Y   N
    | Go to Step 3.
    ```

2.  Return to RAP 1.2.1

3.  Request the Network Supervisor to verify proper operation of the network file server and the network cable.  The server and network cable are working correctly.
    ```
    Y   N
    | Network Supervisor corrects problem.
    ```

4.  Perform a LAN Fax Server PWB Boot sequence operation.  The Green and Red LED's are ON  while downloading the XPRESS.SYS file.
    ```
    Y   N
    | Replace the LAN Fax Server PWB.
    ```

5.  Return to RAP 1.2.1

## 1.2.6  Searching for the XPRESS.OUT file

1.  The LAN Fax Server PWB searches for the  XPRESS.OUT file.  The Green LED is OFF and the Red LED is ON.
    ```
    Y   N
    | Go to Step 3.
    ```

2.  Return to RAP 1.2.1

3.  Request the Network Supervisor to verify proper operation of the network file server and the network cable.  The server and network cable are working correctly.
    ```
    Y   N
    | Network Supervisor corrects problem.
    ```

4.  Perform a LAN Fax Server PWB Boot sequence operation with all cables connected.  The Green and Red LED's are ON while  searching for the XPRESS.OUT file.
    ```
    Y   N
    | Replace the LAN Fax Server PWB.
    ```

5.  Return to RAP 1.2.1

### 1.2.7 Downloading the XPRESS.OUT file

1. The LAN Fax Server PWB downloads the XPRESS.OUT file from the network server. The Green and Red LED's are ON.
   Y     N
   |     Go to Step 3.

2. Return to RAP 1.2.1

3. Request the Network Supervisor to verify proper operation of the network file server and the network cable. The server and network cable are working correctly.
   Y     N
   |     Network Supervisor corrects problem.

4. Perform a LAN Fax Server PWB Boot sequence operation. The Green and Red LED's are ON while downloading the XPRESS.OUT file.
   Y     N
   |     Replace the LAN Fax Server PWB.

5. Return to RAP 1.2.1

### 1.2.8 The LAN Fax Server PWB is connected to the network

1. The Green LED is ON and Red LED is OFF.
   Y     N
   |     Go to Step 3.

2. Perform RAP 1.2.9

3. Request the Network Supervisor to verify proper operation of the network file server and the network cable. The server and network cable are working correctly.
   Y     N
   |     Network Supervisor corrects problem.

4. Perform a LAN Fax Server PWB Boot sequence operation. The Green LED is ON and the Red LED is OFF.
   Y     N
   |     Replace the LAN Fax Server PWB.

5. The LAN Fax Server PWB is connected to the network and is operating correctly. Normal operational functions can now be performed.

## 1.2.9  Printer error condition

1.  An optional printer is installed.
    Y    N
    |    Replace the LAN Fax Server PWB.

2.  The printer paper cassette has sufficient record paper (supplies).
    Y    N
    |    Add paper (supplies)to the printer.

3.  The printer is connected to the LAN Fax Server PWB.
    Y    N
    |    Connect the printer to the LAN Fax Server PWB.

4.  The printer is on line.
    Y    N
    |    Place printer on line.

5.  Remove the printer cable and perform a continuity check. (Refer to figure 8h - 4 for typical parallel cable wiring)
    Continuity checks good.
    Y    N
    |    Inform network supervisor of cable failure.

6.  If the printer has Diagnostics capabilities perform a self test. Diagnostics Test  passes.
    Y    N
    |    Inform network supervisor of printer failure.

7.  Locate an IBM AT PC or equivalent, and connect the printer to the computers parallel port.  Perform a print test.  The operation can be performed.
    Y    N
    |    Inform network supervisor of printer failure.

8.  Replace the LAN Fax Server PWB.  Printer now prints.
    Y    N
    |    Call for assistance.

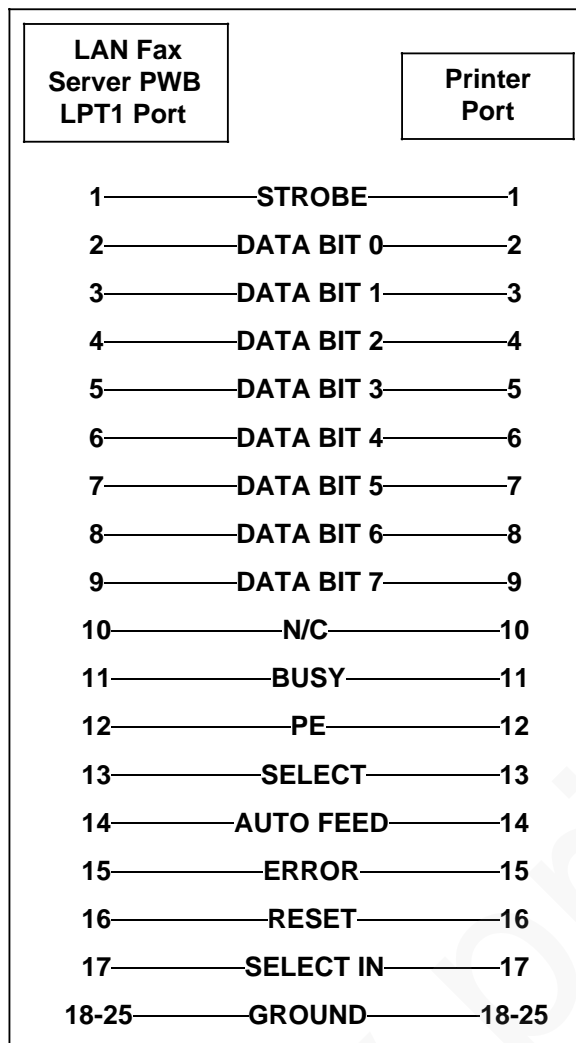9.  Normal operational functions can now be continued.

```
┌─────────────────────────────────────────┐
│ ┌──────────┐                             │
│ │ LAN Fax  │                             │
│ │Server PWB│              ┌──────────┐   │
│ │ LPT1 Port│              │ Printer  │   │
│ └──────────┘              │  Port    │   │
│                           └──────────┘   │
│                                          │
│   1─────────STROBE─────────1             │
│                                          │
│   2─────────DATA BIT 0──────2            │
│                                          │
│   3─────────DATA BIT 1──────3            │
│                                          │
│   4─────────DATA BIT 2──────4            │
│                                          │
│   5─────────DATA BIT 3──────5            │
│                                          │
│   6─────────DATA BIT 4──────6            │
│                                          │
│   7─────────DATA BIT 5──────7            │
│                                          │
│   8─────────DATA BIT 6──────8            │
│                                          │
│   9─────────DATA BIT 7──────9            │
│                                          │
│  10──────────N/C───────────10            │
│                                          │
│  11─────────BUSY───────────11            │
│                                          │
│  12──────────PE────────────12            │
│                                          │
│  13────────SELECT──────────13            │
│                                          │
│  14───────AUTO FEED────────14            │
│                                          │
│  15────────ERROR───────────15            │
│                                          │
│  16────────RESET───────────16            │
│                                          │
│  17───────SELECT IN────────17            │
│                                          │
│ 18-25──────GROUND────────18-25           │
└─────────────────────────────────────────┘
```

Figure 8h - 4. Printer Cable

1.2.10 The LAN Fax Server PWB and terminal are unable to communicate

1. The Green LED is ON and the Red LED is blinking.
   Y   N
   | Return to RAP 1.2.1

2. The terminal is powered on.
   Y   N
   | Connect the AC power cable.

3. Perform a diagnostic self test on the terminal. The diagnostic test was successful.
   Y   N
   | Repair as required following procedures listed in Section 2.

4. Perform a reboot operation, RAP 1.2.1 Step 1. The LAN Fax Server PWB connects to the network.
   Y   N
   | Replace the LAN Fax Server PWB.

5. The LAN Fax Server PWB is connected to the network and is operating correctly. Normal operational functions can now be performed to the LAN Fax Server.

1.2.11   Network connection failure

1. The Green LED is OFF and the Red LED is ON.
   Y   N
   | Return to RAP 1.2.1

2. The LAN Fax Server PWB cable is connected between the PWB and the network .
   Y   N
   | Connect the cable.

3. Perform a continuity check on the cable. The cable is wired pin to pin. Example, pin 1 of one end is connected to pin 1 of the other end. Continuity checks good.
   Y   N
   | Replace the cable

4. Perform reboot operation, RAP 1.2.1 Step 1. The LAN Fax Server PWB connects to the network.
   Y   N
   | Go to Step 6

5. The LAN Fax Server PWB is connected to the network and is operating correctly. Normal operational functions can now be performed.

6. Inform the Network Supervisor that the failure is with the file server or the network cable.

1.2.12   LAN Fax Server fatal error

1. The Green and Red LED's are OFF.
   Y   N
   | Go to step 3.

2. Perform reboot operation, RAP 1.2.1 Step 1. The LAN Fax Server PWB connects to the network.
   Y   N
   | Go to Step 4

3. The LAN Fax Server PWB is connected to the network and is operating correctly. Normal operational functions can now be performed to the LAN Fax Server.

4. Inform the Network Supervisor that the failure is with the software or file Server. The problem is the Software program version was not identified on the network. The Network Supervisor must reload the software and reboot the LAN Fax Server (power off and on).
   Problem is corrected.
   Y   N
   | Call for assistance.

5. Return to RAP 1.2.1

1.2.13   DTMF Detector Test

This test checks the Dual Tone Multiple Frequency (Touch-Tone) Detector on the G3 Coupler PWB. The test is performed as follows.

1. Enter the Service Mode on the terminal, select Service mode diagnostics test 08. Enter Individual test 31 "G3 DTMF Generator & Detector Loop Back test" and then press the Start key. A series of tones are generated on the main PWB and detected by the G3 Coupler PWB. Fault code(s) are displayed on the terminal

    Y   N
    | Return to RAP 1.2.1 step 21

2. Follow Service Manual repair procedures.

1.2.14   Printer Configuration Report

The printer configuration report informs the operator of the print queues serviced by the print server. This report is printed by the 7033 after the LAN Fax Server PWB has successfully been connected to the network server.

1. A printer configuration report is printed after connecting to the network.

    Y   N
    | Configure the print server for the printer on the network.

2. Return to RAP 1.2.1 step 21

1.2.15   Diagnostic Report Printout

With the LAN Fax Server not connected to the network a diagnostic printout containing the ID number of the LAN Fax Server PWB is printed at the 7033.

1. Apply power to the terminal.   At the end of   power up diagnostics test a report is printed at the terminal.
    Y   N
    | Replace the LAN Fax Server PWB.

2. Return to RAP 1.2.1 step 5

1.3 Repair / Adjustment

1.3.1 LAN Fax Server Option

Removal

1. Remove the rear access cover and EMI shield from the terminal.

    a. Disconnect telephone line and handset cords (USO only).

    b. Disconnect the external power supply (If provided).

    c. Disconnect the network cable.

    d. Disconnect the optional printer from connector P2 (If provided).

    e. Remove screw securing access cover, then remove access cover and EMI shield.

        RX only: The RX Token Ring PWB has a ground plate secured with screws at the Telephone Line Filter PWB and the Token Ring PWB. Remove the ground plate.

2. Remove the LAN Fax Server PWB.

Replacement

1. Perform removal procedure in reverse order.

    a. Match the jumper setting from the previous PWB

1.4 Spare Parts List

1.4.1 LAN Fax Server Option

Item	Part Number	Description
1	140K50910	Fax Server Ethernet PWB
	140K50930	Fax Server Token Ring PWB
2	97K12990	110VAC Power Supply with attached power cord (USO) (LA)
	97K13300	220VAC Power Supply without power cord (RX, EU) (LA)
	97K14180	240VAC Power Supply without power cord (RX, UK)
3	152K92956	A. C. Power Cord (UK)
	152K92957	A. C. Power Cord (EU)
	---	(USO) cord is attached to the supply
4	2E43030	Options Cover (USO)
	2E43050	Options Cover (RX)
5	2E43020	EMI Shield (USO)
	2E43040	EMI Shield (RX)
6	140K30230	Option Mother PWB (Tag 7)
7	115E03160	Ground plate (RX)

Machine front
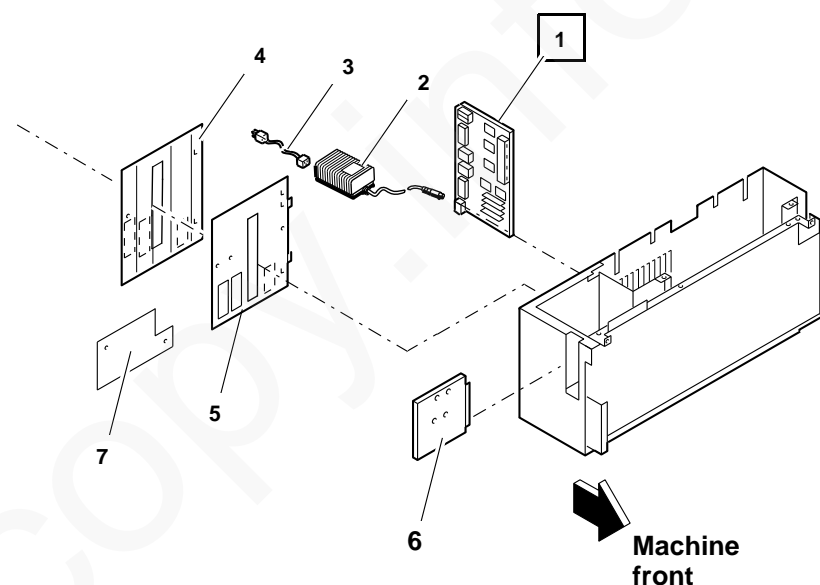
1.5 Installation

1.5.1 LAN Fax Server Option (Ethernet Version)

Note: Before installing the Fax Server PWB enter the Service Mode and obtain a copy of the Options Report. From the Report and table below confirm that the required Firmware levels to support the option are installed into the terminal.

Note: The LAN Fax Server option can not co-exist with any other option already installed in the terminal. Before installing this option remove all other existing options connected to the Option Mother PWB.

1. This option requires a terminal with firmware level 6.01 (Tag 15) or higher.

2. Obtain an Options Report. Verify the Rom Program Version to the following:

	ROM NAME	VERSION
Ram/Rom PWB	MR0	6.01/4400
	MR1	6.01/BB00
	MR2	6.01/6F00
	MR3	6.01/B800
	FT0	6.01/7900
G3 PWB	G3M	6.01/0E00

3. Install the auxiliary tray if not already installed. If the auxiliary tray option contains a firmware upgrade kit, install only the firmware listed in step 2.

Note: Some auxiliary tray option kits have lower level firmware and late production option kits have the firmware upgrade kit deleted.

The auxiliary tray is part of the base RX 7033 terminal and is not considered as an option.

4. Perform a Diagnostic Self Test to verify correct machine operation.

Note: During the installation of the hardware the network supervisor can be installing the software onto the network following the procedures in the Supervisors Handbook.

5. Remove the Fax Server PWB and mother PWB options, external power supply (If provided), access cover, EMI shield, manuals, hardware, and software disks from the shipping carton.

6. Disconnect the power cord from the terminal.

7. Disconnect the telephone line and handset cord.

8. Remove the screw securing the Access cover, then remove the plastic and metal covers.

9. If not already installed, install the Option Mother PWB. Set the PWB on the guide and slide it to the left to connect P1 to J230 on the main PWB. Secure the upper right corner of the PWB to the electrical box using the hardware provided with the option.

10. The Fax Server PWB is factory set for Ethernet thin cable type (Refer to figure 1). If the network is Ethernet thick or 10 BaseT proceed to step 11. If installing on a Ethernet thin cable type proceed to step 12.

11. Locate the Ethernet Thick/Thin and RJ45 (10 BaseT) jumper J3 on the Fax Server PWB and select either the thick or 10 BaseT position (Refer to figure 1).
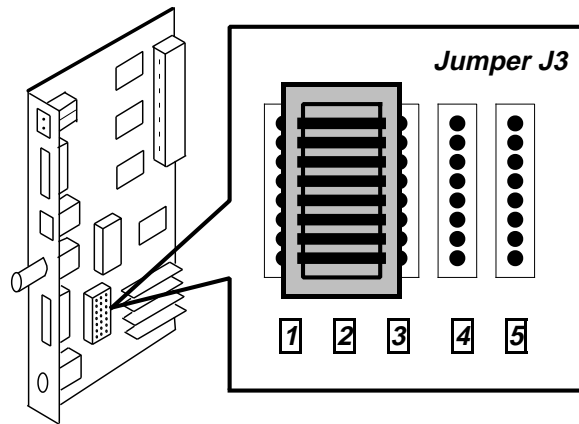
Figure 1 Ethernet Cable Type Selection

Ethernet Thin	*Jumper Rows 1 & 3 (as shown above)*
Ethernet Thick	*Jumper Rows 2 & 4*
Ethernet 10 Base T	*Jumper Rows 3 & 5*

12. Install the Fax Server PWB into the terminal.

13. Remove the required plastic knock-out (s) on the access cover for external harness connections to the Fax Server PWB.

14. Install the metal EMI shield and the plastic access cover and secure with hardware.

Installation Cont:

15. Connect the external network cable, the printer cable (optional) and the External power supply (Ethernet Thick only) to the Fax Server PWB (Refer to figure 2).
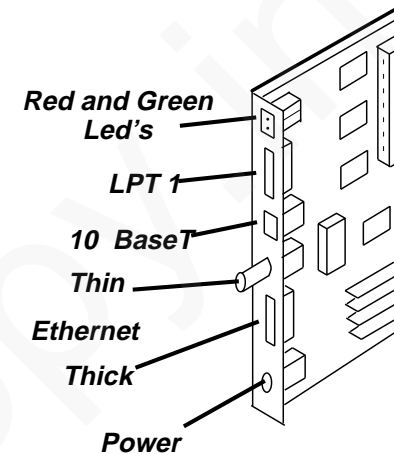
Power	*Connection for external 12VDC power supply (Ethernet Thick only)*
Ethernet Thick	*Connection for DB-15 cable to the Ethernet network*
Ethernet thin	*Connection for BNC cable to the Ethernet network*
10 Base T	*Connection for Modular cable to the Ethernet network*
LPT1	*Connection for optional printer (HP Laser Jet compatible)*
Red and Green Led's	*Status indicators for the Fax Server PWB*

Figure 2 - Ethernet Connector Location

16. Connect AC power to the terminal and the external power supply (Ethernet thick cable type only).

17. Enter the service mode and perform a diagnostic self test on the terminal.

System Check

Note: The network connection is not yet made. The LED sequence on the Fax Server PWB will not end with the normal indications.

1. Power on the terminal and external power supply (if connected). If the normal idle display appears continue with step 2. If not go to System Check procedures in Section 1 of this manual.

2. The Red and Green LEDs on the Fax Server PWB will blink on and off once. Then the Green LED will flash from dim to bright for about 3 seconds then blink on and off for about 5 seconds. Then the led's will remain off. At the end of the LED sequence a diagnostic print out (Refer to figures 3 & 4) will be printed on the terminal or optional printer if installed. The diagnostic print contains the LAN Fax Server PWB ID number and a fault that relates to the Fax Server not being connected to the network. If this sequence does not occur proceed to the Repair Analysis Procedures in this section.

```
         7033 LAN Fax Server Ethernet PWB ID Number
                         ↙
# 04200011 - 10BASE2 [thin]
****** 7033 Lan Fax Server - Token Ring 0.15 build date Apr 15. 1992 10:36:03 AM
Failed configuration of 7033 LAN Fax Server - Ethernet :  04200011 (#1)
Network:  00  00  00  05  #1  #2  30  34  32  30  30  31  31
Default server :  FS1

7033 Lan Fax Server - Token Ring Diagnostics
-------------------------
Token - Ring IBM - Source - Routing Mode
MAC layer packet size  +  4352

KNOWN FILE SERVERS
--------------------------
[X1]  FS1  V2.15  (ID 0X14a0045)  [00  00  00  05 ]
[Xffffffff]  FS3
[Xffffffffl    FS2
```

Figure 3 Ethernet Thin Example

```
         7033 LAN Fax Server Ethernet PWB ID Number
                         ↙
# 04200011 - [thick]
****** 7033 Lan Fax Server - Ethernet 0.12 build date Apr 08. 1992 01:54:03 PM
Failed configuration of 7033 LAN Fax Server - Ethernet: 04200011 (#1)
Network: 00  00  00  05  #1  #2  30  34  32  30  30  30  31  32
Default server:  FS1
7033 LAN Fax server - Ethernet Diagnostics
----------------------
Ethernet IEEE 802.3  10x   01
MAC  layer packet size =1152


KNOWN FILE SERVERS
----------------------
[X1]  FS1  V2.15  (ID 0X f500b3)  [00  00  00  05 ]
[Xffffffff]  FS3
[Xffffffffl    FS2
```

Figure 4 Ethernet Thick Example

3. Print an Options Report. Observe that the report shows two options installed, the RS-232 and LAN Fax Server. The report indicates an RS232 option is installed when in fact no option exist. This is because some of the data buss signals are common between both options and are recognized by the terminal. All references to the RS232 option listed on the report should be ignored. You should however confirm that the terminal has recognized the "LAN Fax Server " in the Option Name column and "Ethernet" in the Status column.

4. Remove power from the terminal and the external power supply (if connected). At this point if the Network software has been loaded, the Ethernet connection can be applied. If an optional printer is to be used that connection may also be applied. It is recommended that the network supervisor make these connections and perform all required setup procedures for their network. The setup procedures are located in the Supervisors Handbook.

5. After connecting the LAN Fax Server PWB to the network and the optional printer to the parallel port on the PWB apply AC power to the terminal. Once the LAN Fax Server PWB downloads the network files a printer configuration report is printed on the terminal (figure 5). This report will not be printed if the optional printer has not been configured for the print server.

PRINTERS CONFIGURED FOR PRINT SERVER name SERVICE-PS:

Port FAX_MACHINE number 0

Port PARALLEL number 1 type Parallel

THE MASTER FILE SERVER name is FS1

QUEUES SERVICED BY PRINT SERVER name SERVICE-PS:

File Server	Queue	Port	Priority
FS1	SERVICE_FAX	FAX_MACHINE	1
FS1	SERVICE	PARALLEL	1

NOTIFY LIST FOR:

Port	File Server	User Name	First Next

NO NOTIFY LIST CONFIGURED

Report date: April 24, 1992 08:30

Figure 5 Printer Configuration Report

1.5.2 LAN Fax Server Option (Token Ring Version)

Note: Before installing the Fax Server PWB enter the Service Mode and obtain a copy of the Options Report. From the Report and table below confirm that the required Firmware levels to support the option are installed into the terminal.

Note: The LAN Fax Server option can not co-exist with any other option already installed in the terminal. Before installing this option remove all other existing options.

1. This option requires a terminal with firmware level 6.01 (Tag 15) or higher.

2. Obtain an Options Report. Verify the Rom Program Version to the following:

	ROM NAME	VERSION
Ram/Rom PWB	MR0	6.01/4400
	MR1	6.01/BB00
	MR2	6.01/6F00
	MR3	6.01/B800
	FT0	6.01/7900
G3 PWB	G3M	6.01/0E00

3. Install the auxiliary tray if not already installed. If the auxiliary tray option contains a firmware upgrade kit, install only the firmware listed in step 2.

Note: The auxiliary tray is part of the base RX 7033 terminal and is not considered as an option.

4. Perform a Diagnostic Self Test to verify correct machine operation.

Note: During the installation of the hardware the network supervisor can be installing the software onto the network following the procedures in the Supervisors Handbook.

5. Remove the Fax Server PWB, option mother PWB, access cover, EMI shield, manuals, hardware and software and disks from the shipping carton.

6. Disconnect the power cord from the terminal.

7. Disconnect the telephone line and handset cord.

8. Remove the screw securing the Access cover, then remove the plastic and metal covers.

9. If not already installed, install the Option Mother PWB. Set the PWB on the guide and slide it to the left to connect P1 to J230 on the main PWB. Secure the upper right corner of the PWB to the electrical box using the hardware provided with the option.

10. The Token Ring version PWB is factory set for 16 Mbps. If a speed of 4 Mbps is required proceed to step 11. If not, proceed to step 12.

11. Locate the jumper W1 on the Fax Server and move the jumper to the 4 Mbps position (Refer to figure 6).
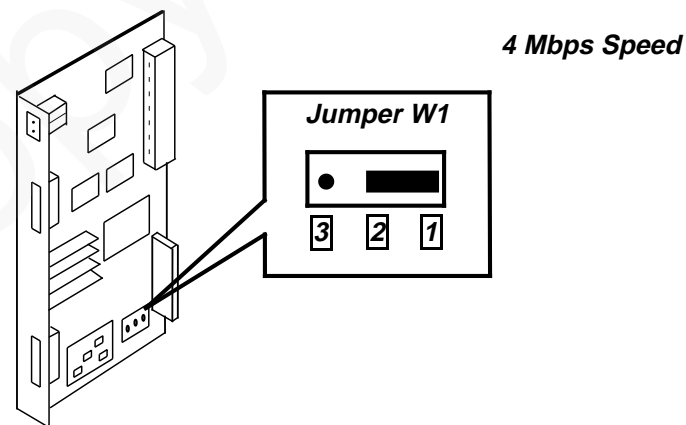

Figure 6 Data Rate Selection

4 Mbps Speed   Jumper pins 1 & 2 (as illustrated above)
16 Mbps   Jumper Pins 2 & 3

12. Install the Fax Server PWB into the terminal.

13. Remove the required plastic knock-out (s) on the access cover for external harness connections to the Fax Server PWB.

14. Install the metal EMI shield and the plastic access cover and secure with hardware.

Note: The RX Token Ring PWB also requires a ground plate. Install the ground plate between the Token Ring PWB and the Telephone Line Filter PWB with the grounding screws. Install plastic access cover.

15. Assist the customer (If required) in connecting the Token Ring network cable and printer cable (optional) to the Fax Server PWB (Refer to figure 7).
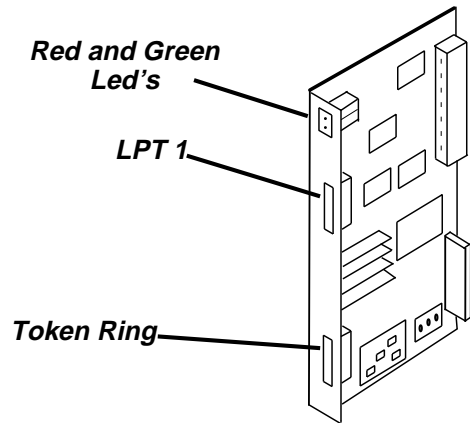

Red and Green Led's

LPT 1

Token Ring

Figure 7 - Token Ring Connector Locations

Red and Green Led's *Status indicators for the Fax Server PWB*
LPT1 *Connection for optional printer (HP Laser Jet or Compatible*
Token Ring *Connection for DB-9 cable to the network*

16. Enter the service mode and perform a diagnostic self test on the terminal.

System Check

Note: The network connection is not yet made. The LED sequence on the Fax Server will not end with the normal indications.

1. Power on the the terminal. If the normal idle display appears continue to step 2. If not go to the System Check procedures in Section 1 of this manual.

2. The Red and Green LEDs on the Fax Server PWB will blink on and off once. Then the Green LED will flash from dim to bright for about 1 seconds then blink on and off for about 5 seconds. Then the led's will remain off. At the end of the LED sequence a diagnostic print out Refer to figure 8) will be printed on the terminal or optional printer if installed.   The diagnostic print contains the LAN Fax Server PWB ID number and a fault that relates to the Fax Server not being connected to the network. If this sequence does not occur proceed to the Repair Analysis Procedures in this section.

3. Print an Options Report. Observe that the report shows two options installed, the RS-232 and LAN Fax Server. The report indicates an RS232 option is installed when in fact no option exist. This is because some of the data buss signals are common between both options and are recognized by the terminal. All references to the RS232 option listed on the report should be ignored. You should however confirm that the terminal has recognized the "LAN Fax Server " in the Option Name column and "Token Ring" in the Status column.

4. Remove power from the terminal. At this point if the Fax Server software has been loaded onto the network file server, the network connection can be applied. If an optional printer is to be used that connection may be applied. It is recommended that the network supervisor make these connections and perform all required setup procedures for their network. The setup procedures are located in the Supervisors Handbook.

5. After connecting the LAN Fax Server PWB to the network and the optional printer to the parallel port on the PWB apply AC power to the terminal. Once the LAN Fax Server PWB downloads the network files a printer configuration report is printed on the terminal (figure 9).   This report will not be printed if the optional printer has not been configured for the print server.

```
       7033 LAN Fax Server Token Ring PWB ID Number




# 04300011
******  7033 Lan Fax Server - Token Ring 0.15 build date Apr 15. 1992 10:36:03 AM
Failed configuration of 7033 LAN Fax Server - Token Ring :  04300011 (#1)
Network:  00  00  00  06  #1  #2  30  34  33  30  30  31  31
Default server :  FS1


7033 Lan Fax Server - Token Ring Diagnostics
------------------------
Token - Ring IBM - Source - Routing Mode
MAC layer packet size  +  4352


KNOWN FILE SERVERS
---------------------------
[X1]  FS3
[X7]  FS1 V2.15 (ID  0xed00a7)  [00  00  00  05
```

Figure 8 Token Ring Example

```
PRINTERS CONFIGURED FOR PRINT SERVER name SERVICE-PS:
Port  FAX_MACHINE number 0
Port  PARALLEL number 1 type Parallel
THE MASTER FILE SERVER name is FS1
QUEUES SERVICED BY PRINT SERVER name SERVICE-PS:

File Server           Queue             Port          Priority
FS1                   SERVICE_FAX       FAX_MACHINE   1
FS1                   SERVICE           PARALLEL      1

NOTIFY LIST FOR:

Port                  File Server       User Name     First Next
NO NOTIFY LIST CONFIGURED

Report date:  April 24, 1992  08:30
```

Figure 9 Printer Configuration Report